

KIC 004752731

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
004752731-01	OBS	No	0.512234	131.954744	1671.8	1.500	7.1	-1.0	1.80	6976	7.45	36494.99
004752731-02	OBS	No	0.512216	131.716930	198.3	1.173	8.0	7.3	1.80	6976	2.59	36496.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004752731-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS
004752731-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— SAME_NTL_PERIOD—CENT_KIC_POS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

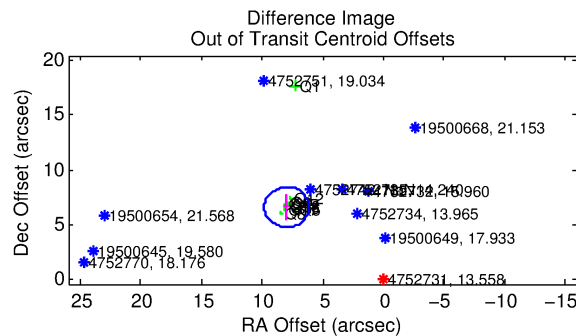
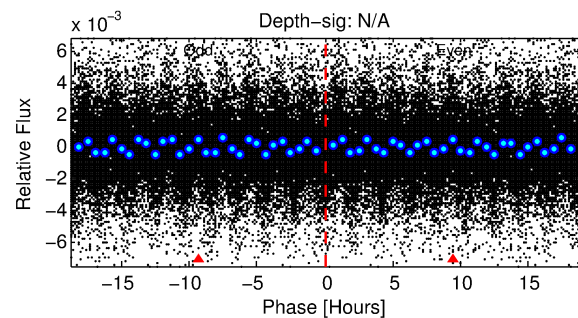
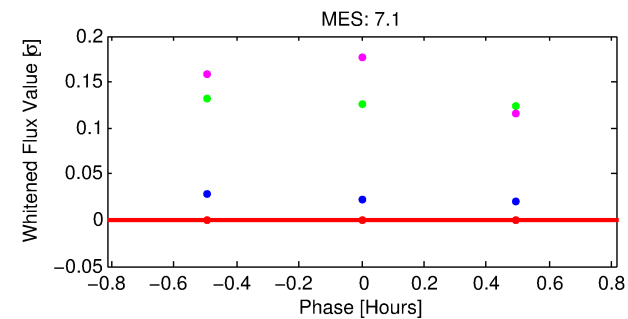
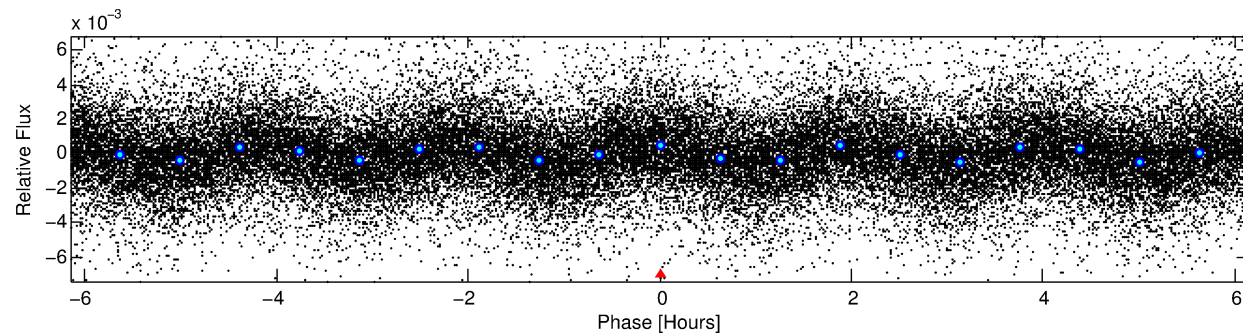
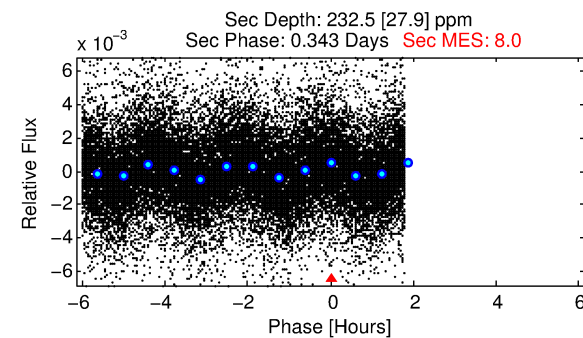
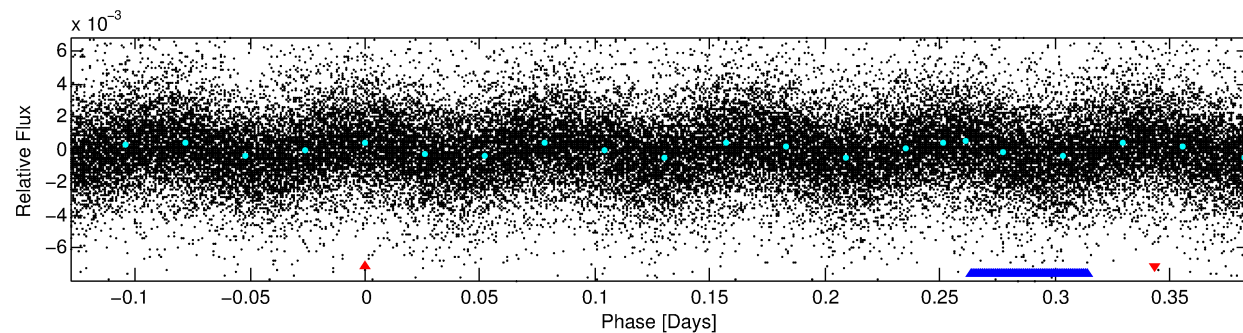
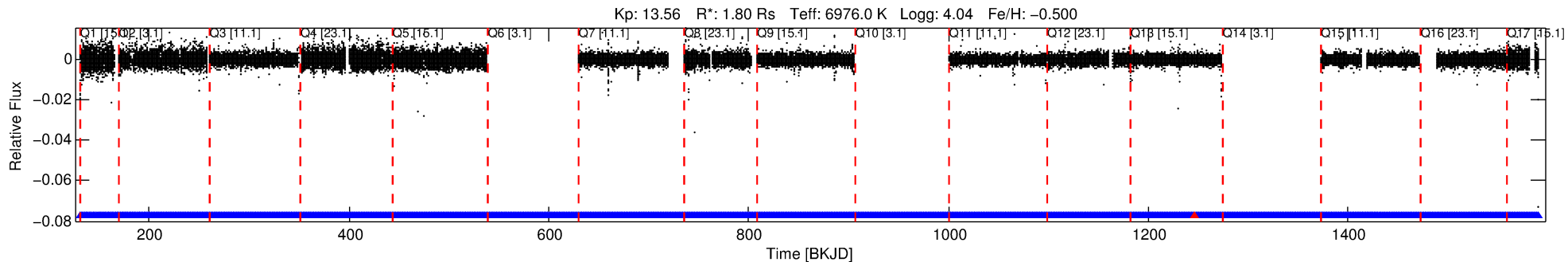
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004752731-01

No Significant Match Found

DV One-Page Summary

KIC: 4752731 Candidate: 1 of 2 Period: 0.512 d



TPS TCE Results:

Period = 0.51223 d
Epoch = 131.9547 BKJD

DV fit results are unavailable

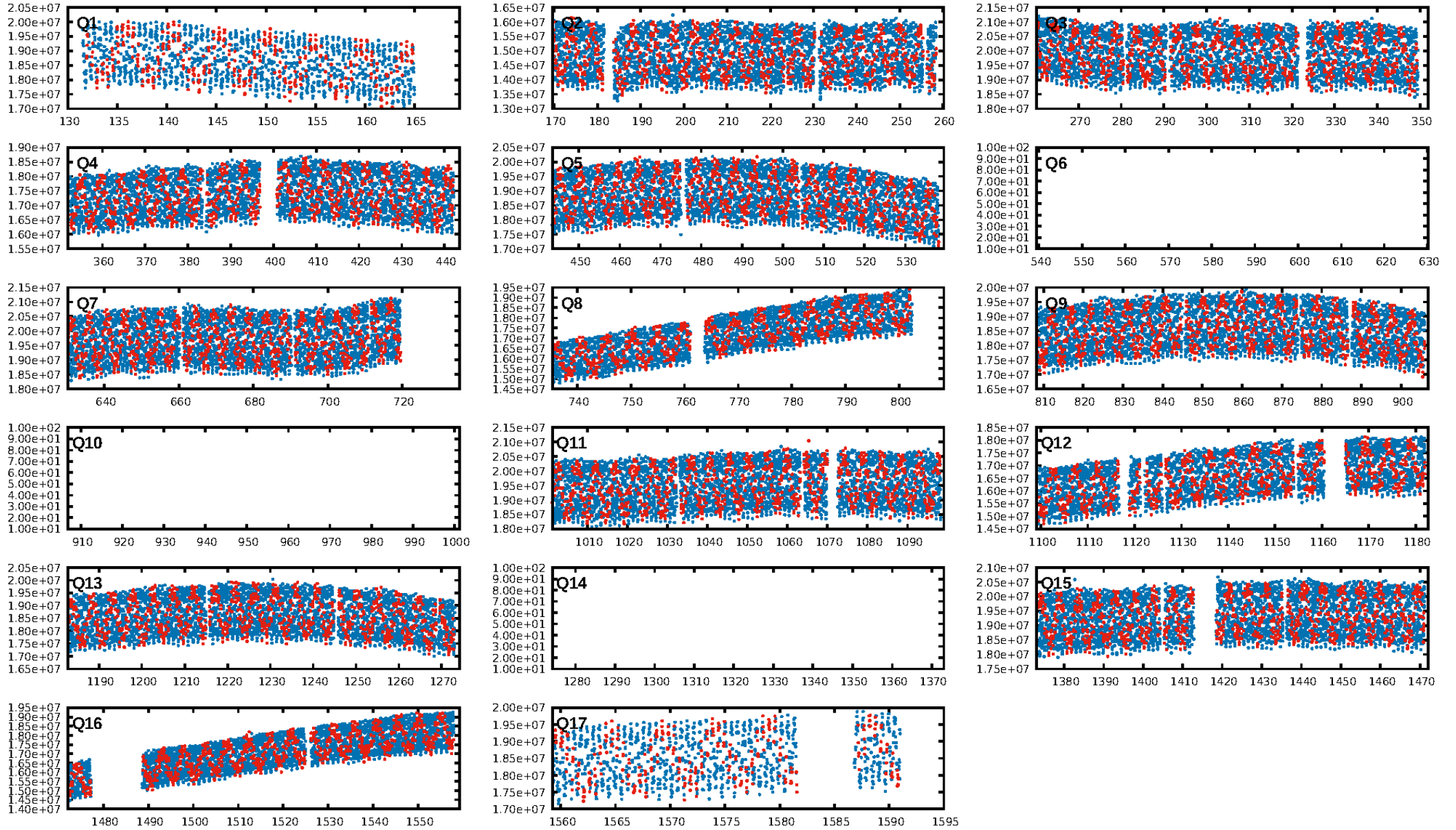
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.26e-25
RollingBand-fgt: 1.00 [1975/1976]
GhostDiagnostic-chr: 1.478
Centroid-sig: 70.6%
Centroid-so: 0.981 arcsec [12.76σ]
OotOffset-rm: 10.330 arcsec [16.74σ]
KicOffset-rm: 0.991 arcsec [1.60σ]
OotOffset-st: 1/2/3/5 [11]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 0.00 [0/14]

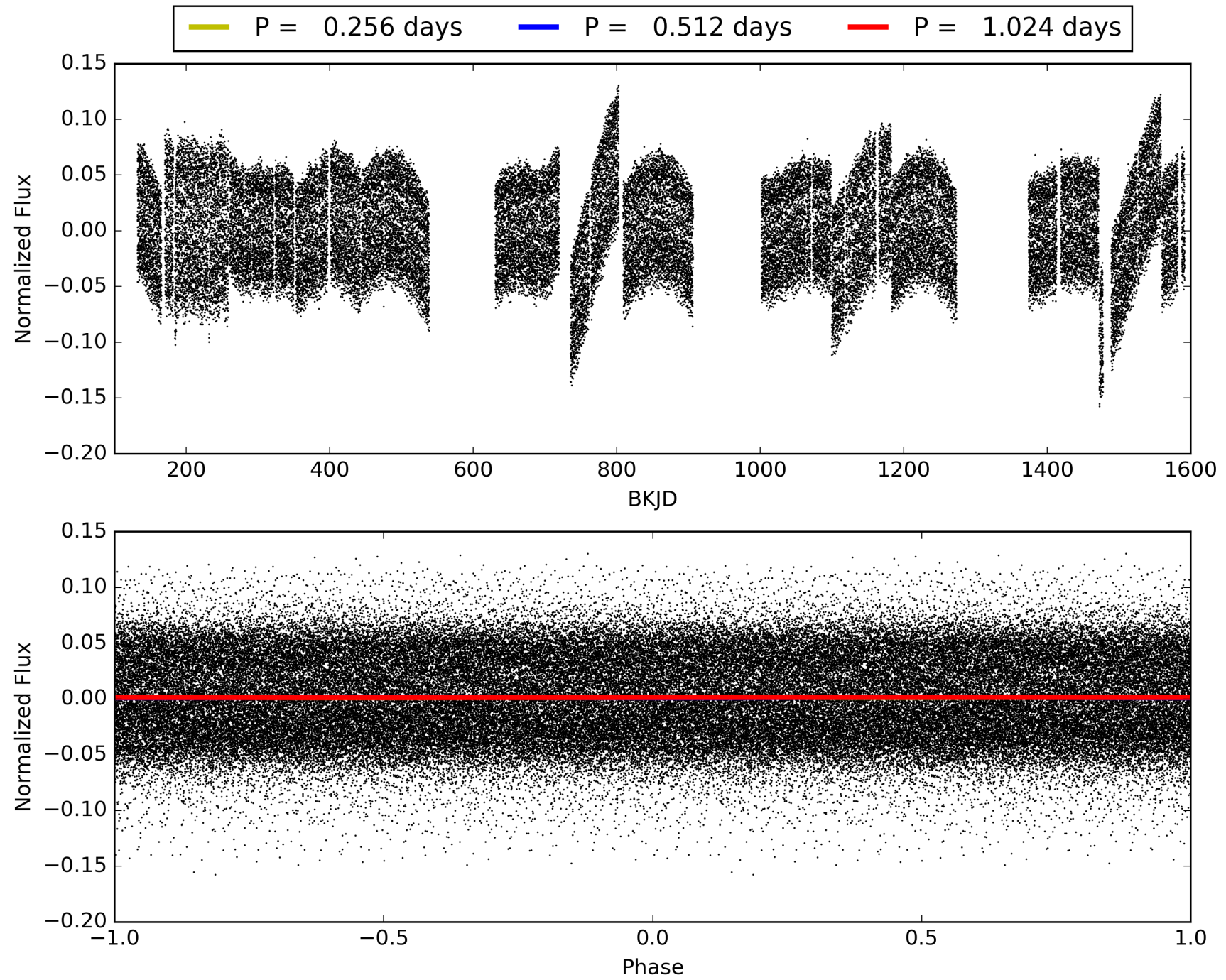
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:01:13 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004752731-01, PDC Light Curves

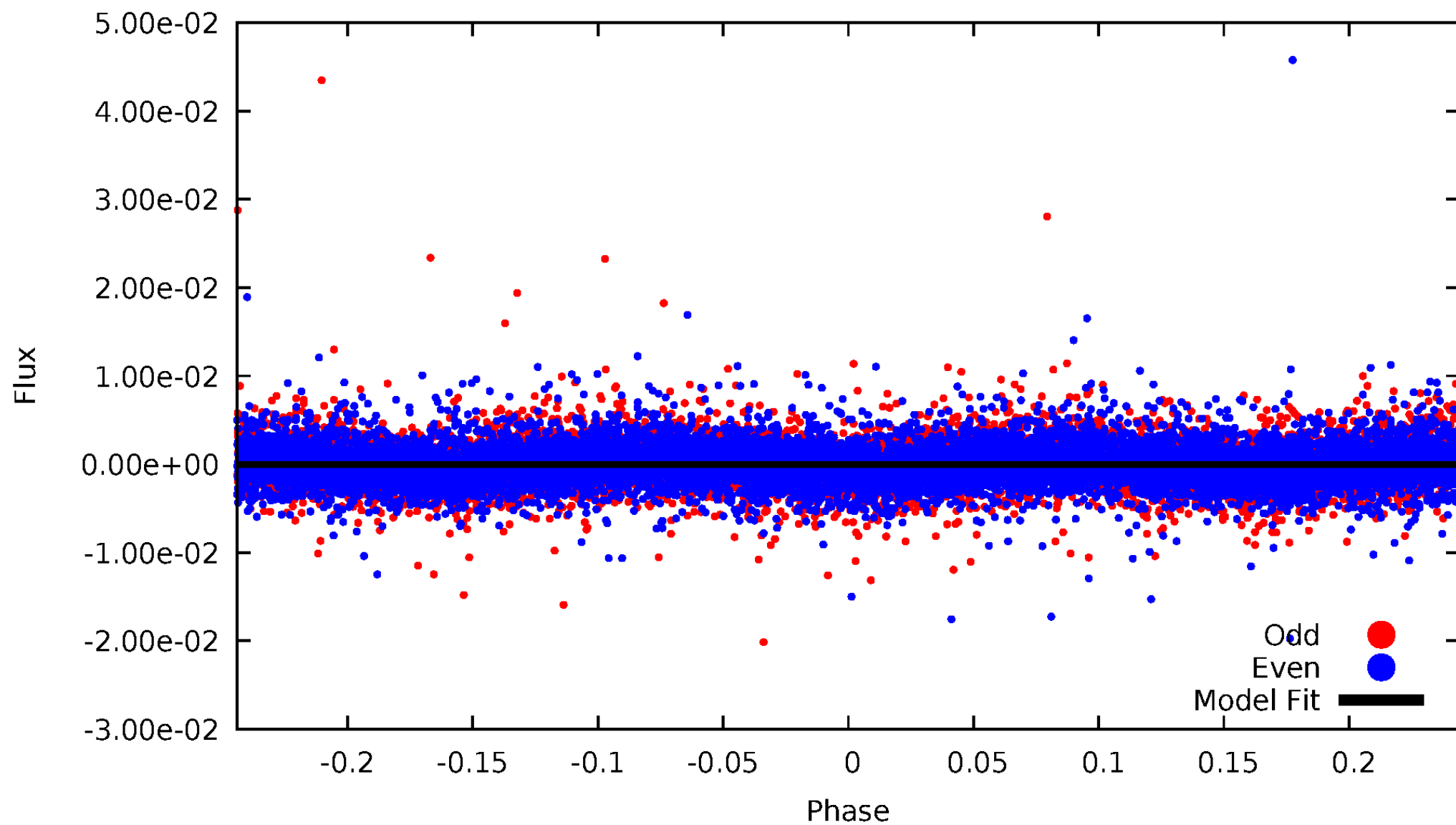


TCE 004752731-01



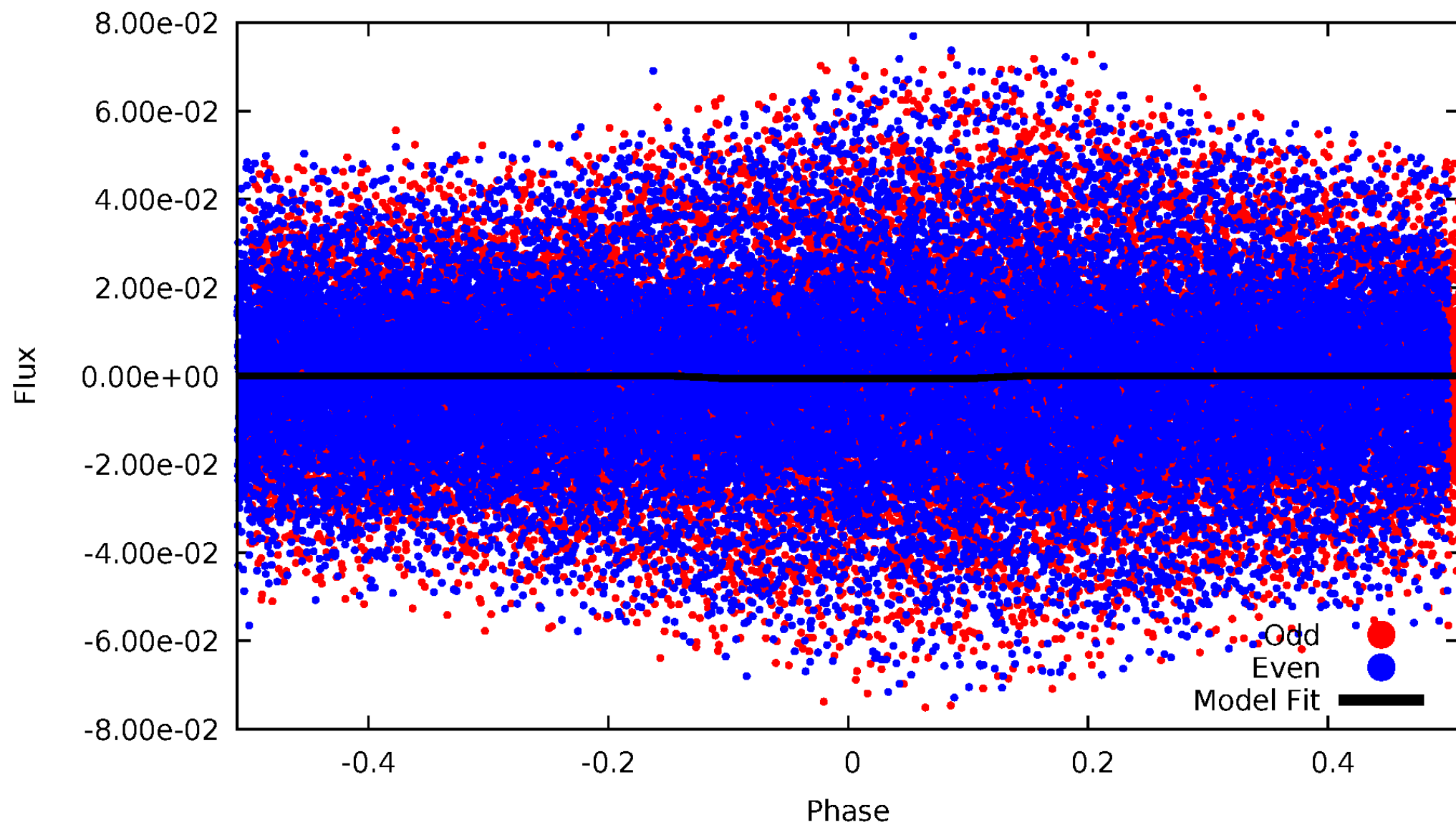
DV Odd/Even

TCE 004752731-01

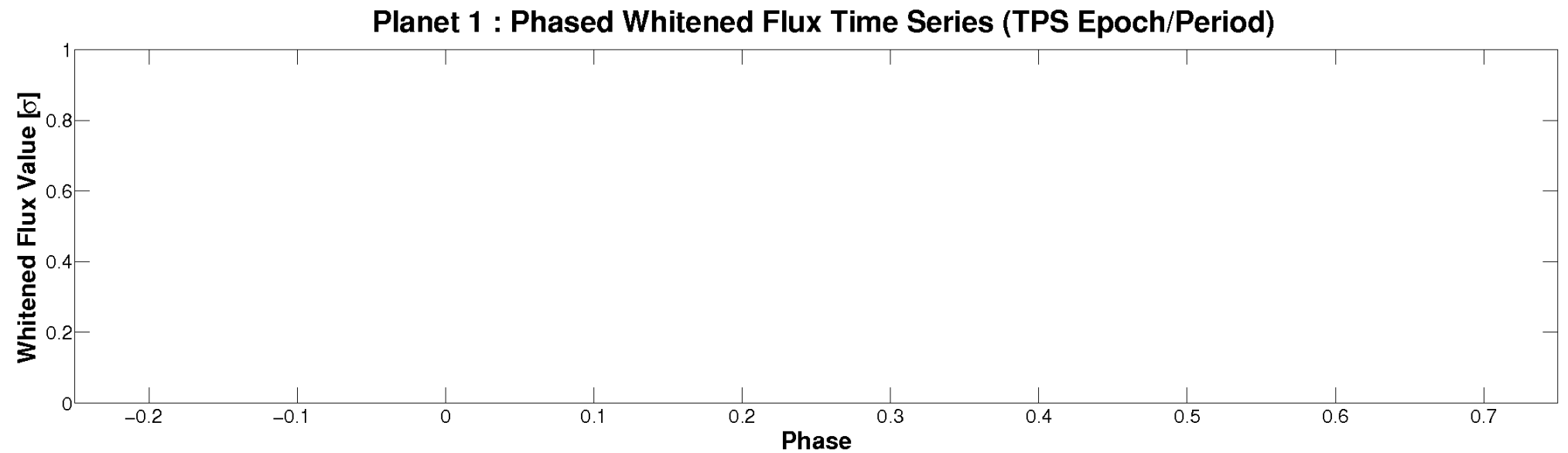
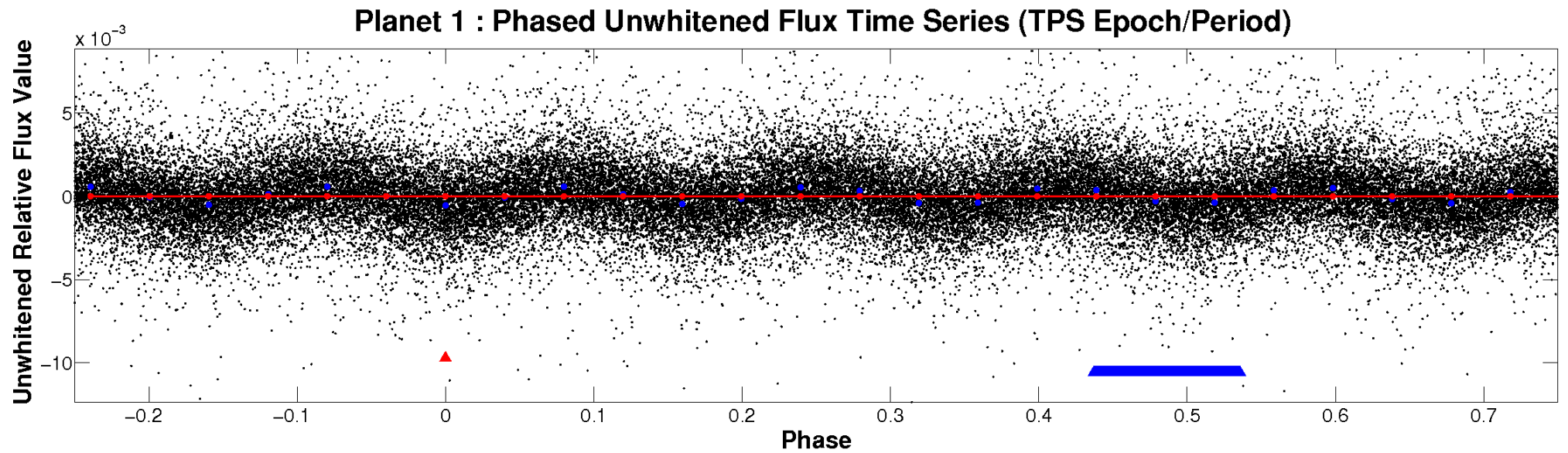


ALT Odd/Even

TCE 004752731-01

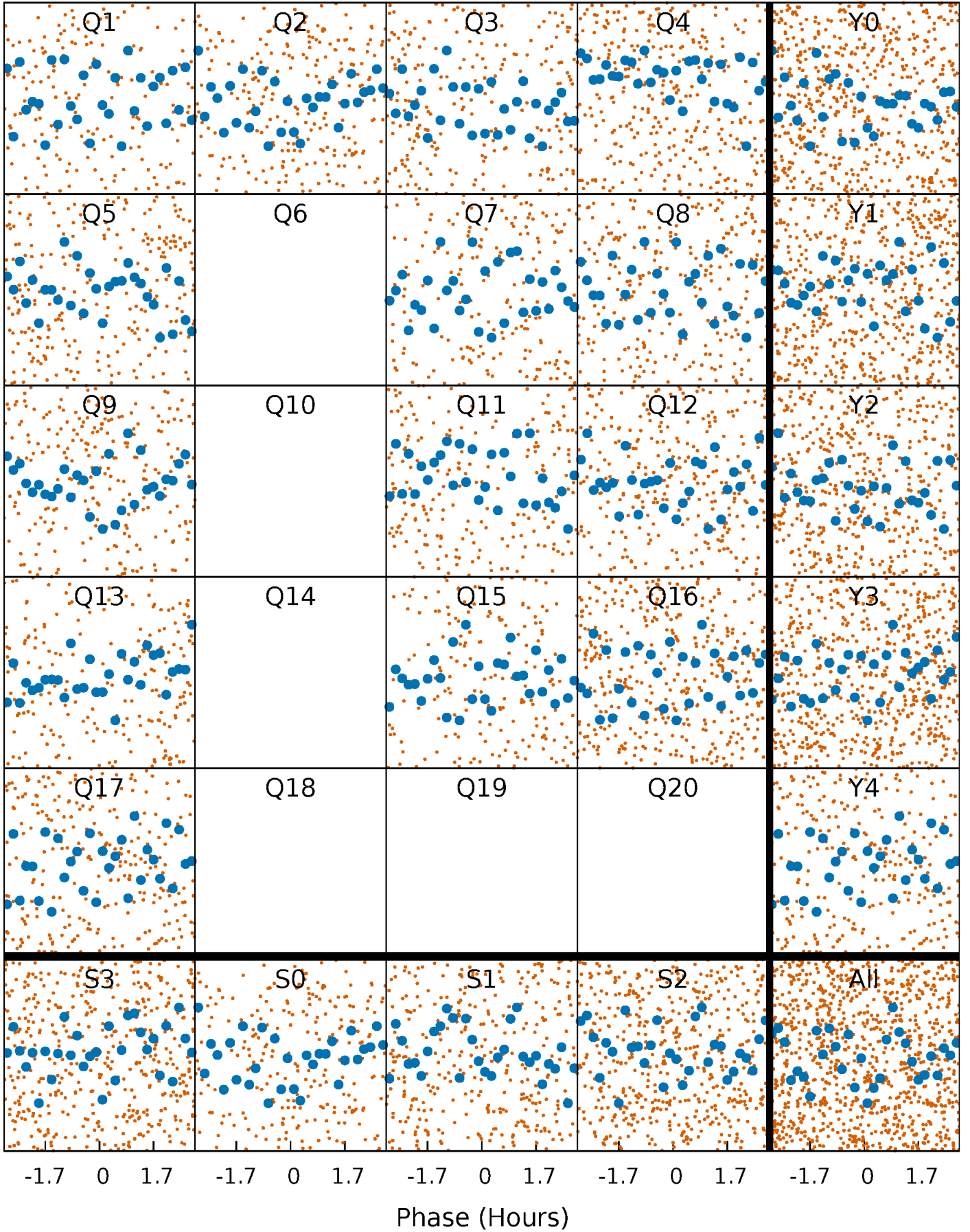


Non-Whitened Vs. Whitened Light Curve



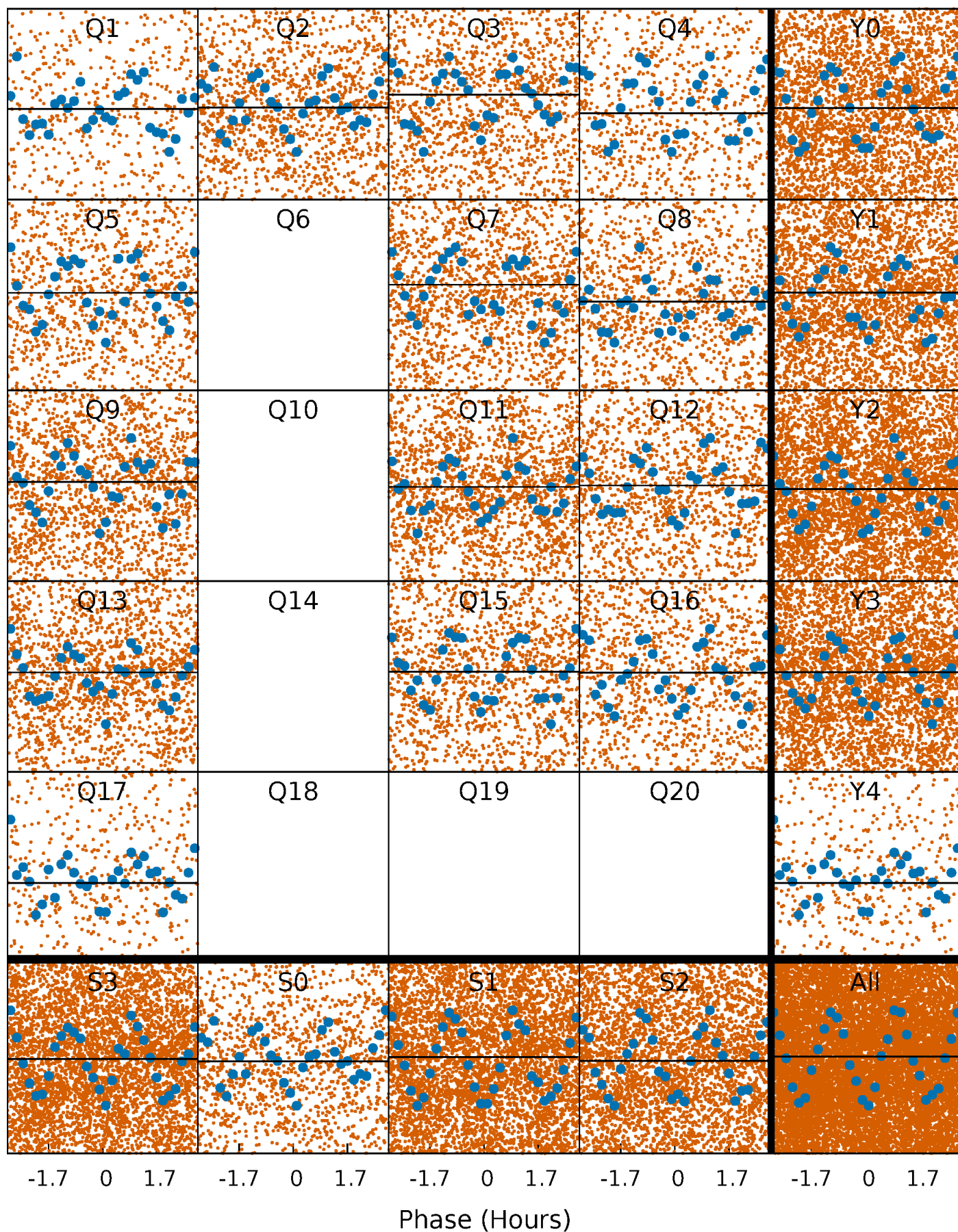
PDC Quarter-Phased Transit Curves

TCE 004752731-01 P= 0.512234 Days $T_0=131.954744$ (BKJD)



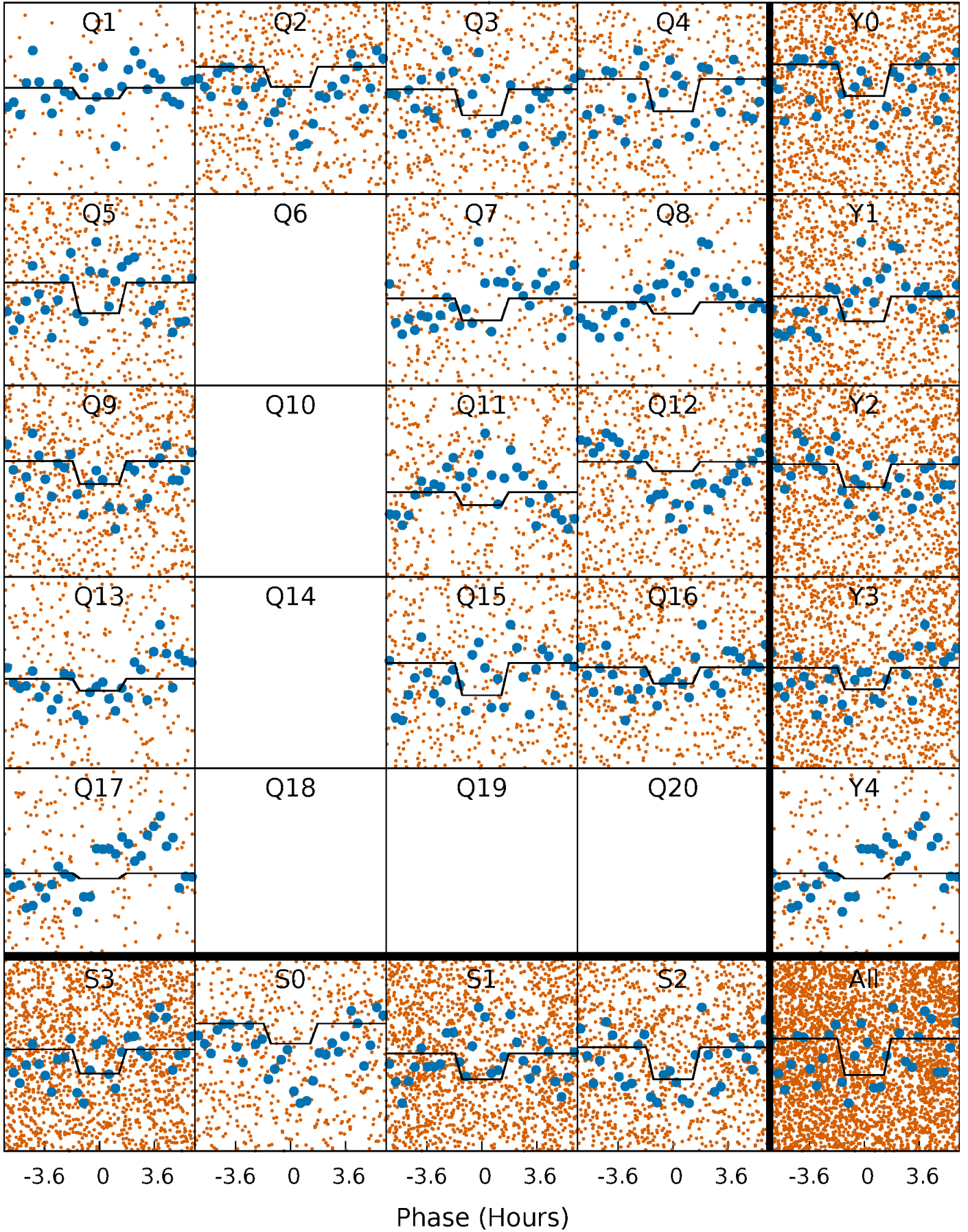
DV Quarter-Phased Transit Curves

TCE 004752731-01 P= 0.512234 Days $T_0=131.954744$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

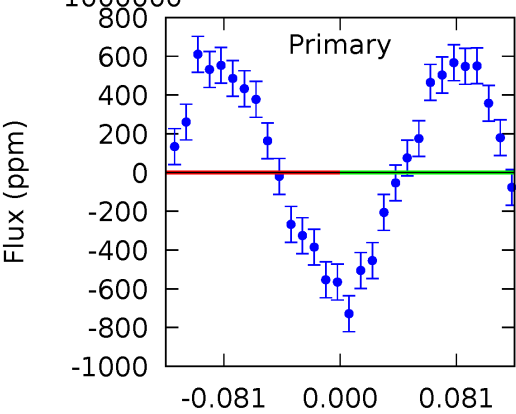
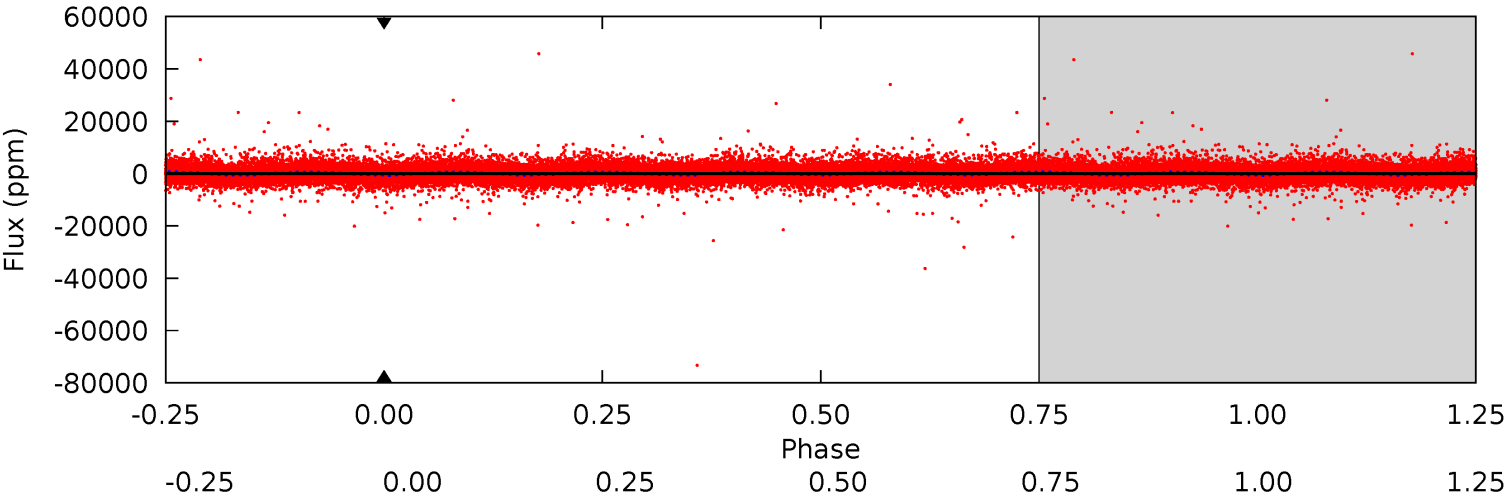
TCE 004752731-01 P= 0.512234 Days $T_0=131.915065$ (BKJD)



DV Model-Shift Uniqueness Test

004752731-01, P = 0.512234 Days, E = 131.442510 Days

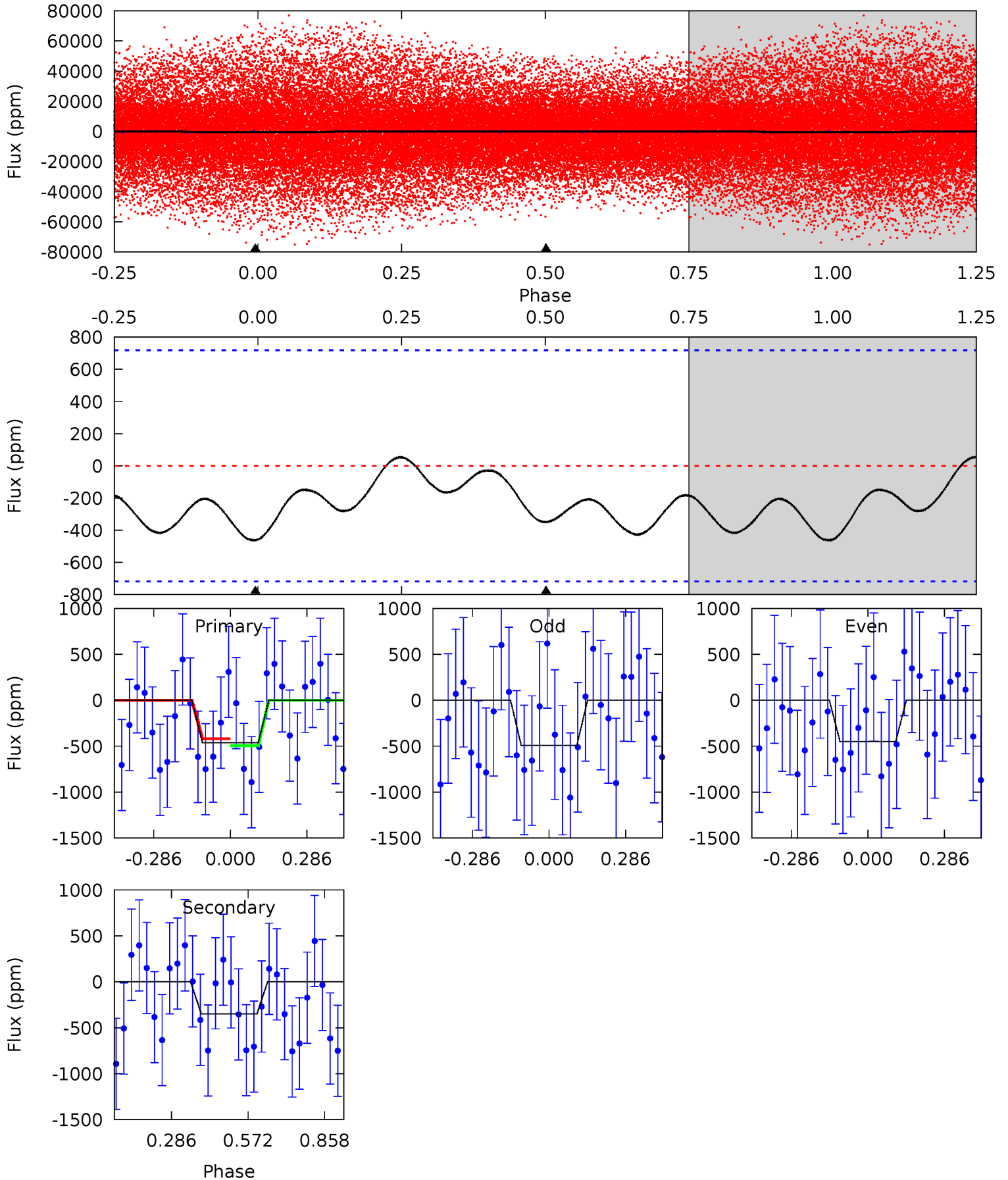
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004752731-01, P = 0.512234 Days, E = 131.402831 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.80	2.11	0	0	4.34	1.07	0.69	2.80	2.80	2.11	2.11	0.13	0.18	0.11	0.24



Stellar Parameters For KIC 004752731

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6976^{+216}_{-312}	$4.045^{+0.280}_{-0.151}$	$-0.500^{+0.250}_{-0.300}$	$1.796^{+0.478}_{-0.584}$	$1.305^{+0.179}_{-0.247}$	$0.317^{+0.601}_{-0.138}$
	+3%/-4%	+7%/-4%	+50%/-60%	+27%/-33%	+14%/-19%	+190%/-44%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004752731-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$16.29^{+16.16}_{-11.55}$	4818^{+375}_{-479}	4836^{+22087}_{-28262}	$0.968^{+72.621}_{-58.226}$
Alt.	-350 ± 166	$13.31^{+15.28}_{-9.47}$	4847^{+392}_{-441}	-3564^{+9563}_{-620}	$0.169^{+1.976}_{-0.133}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

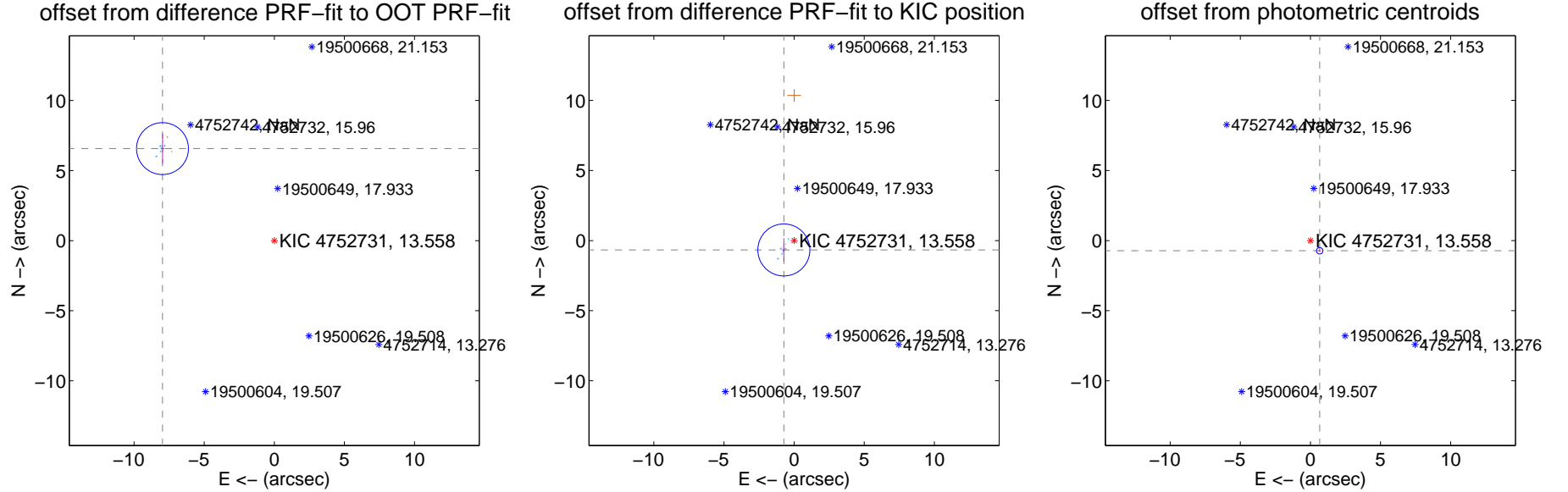
DV Centroid Data

Supplemental centroid analysis for 004752731-01. Kepler magnitude: 13.56. Transit SNR -1.00

There are 9 quarters with good PRF difference image offsets

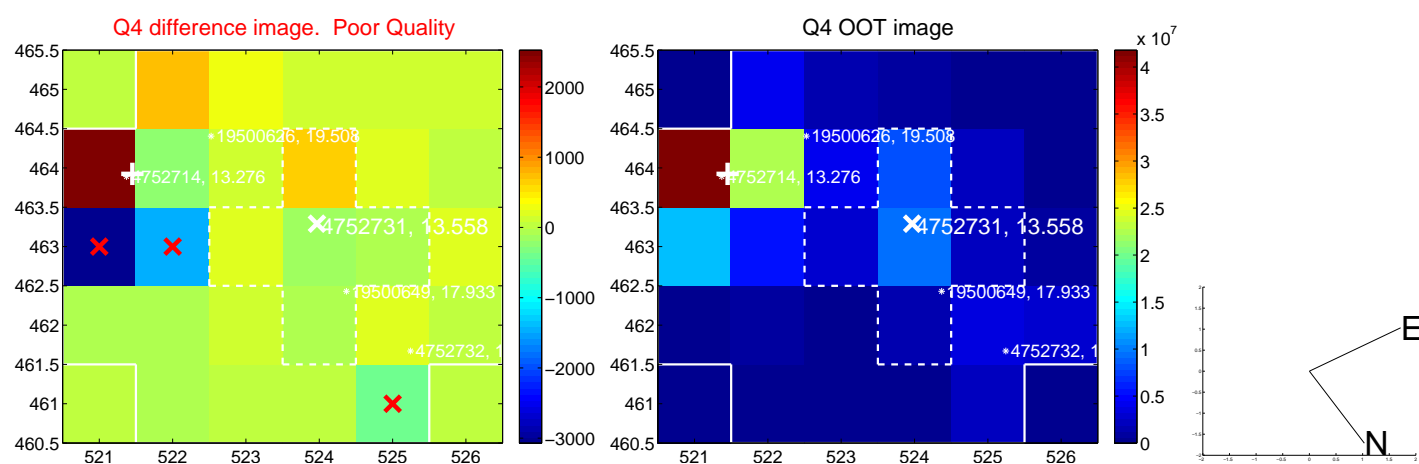
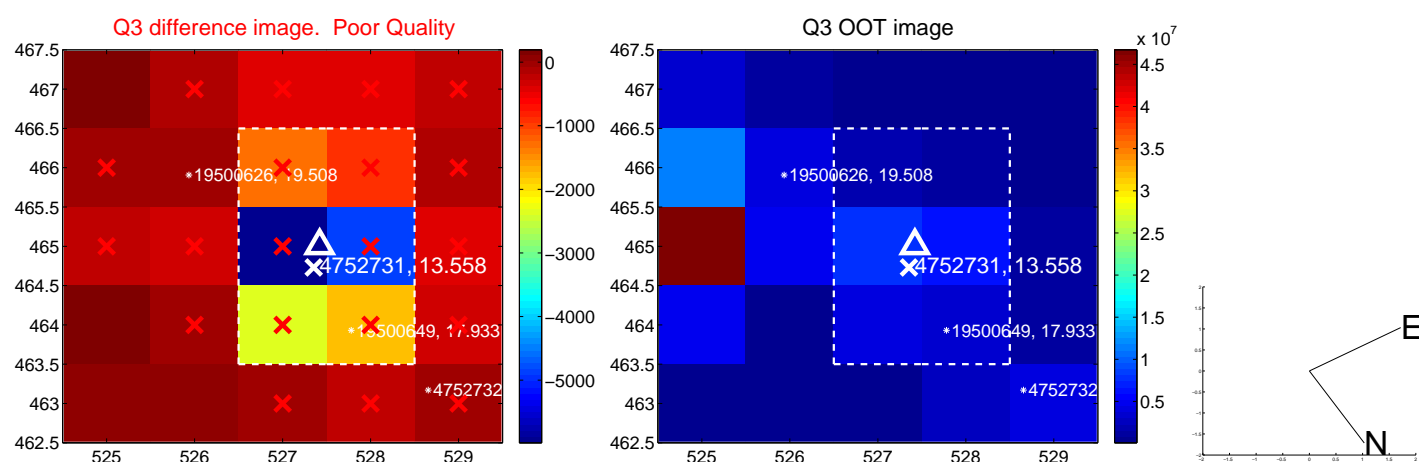
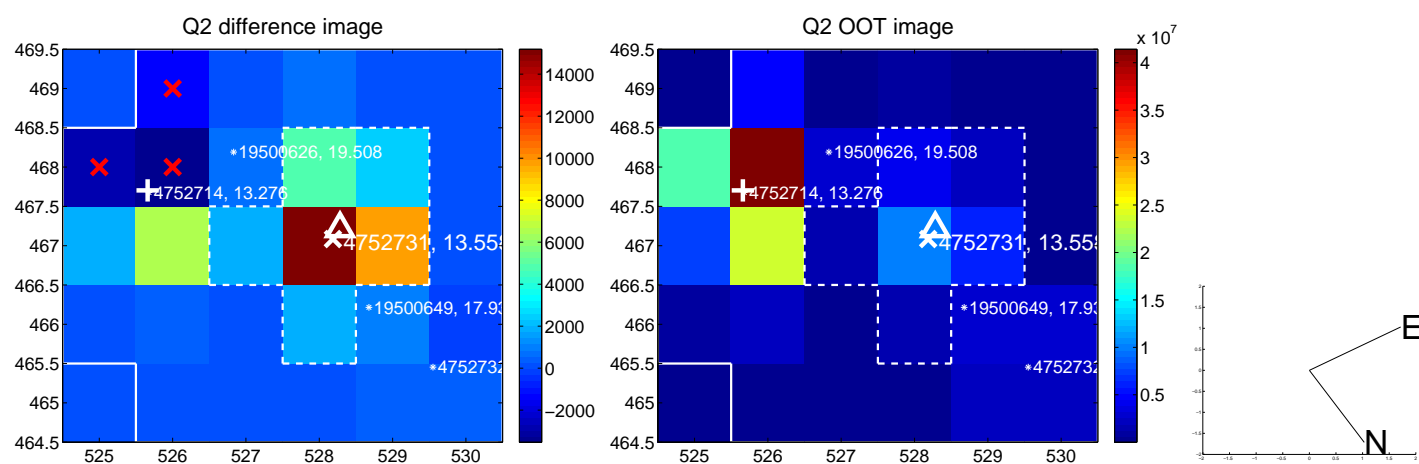
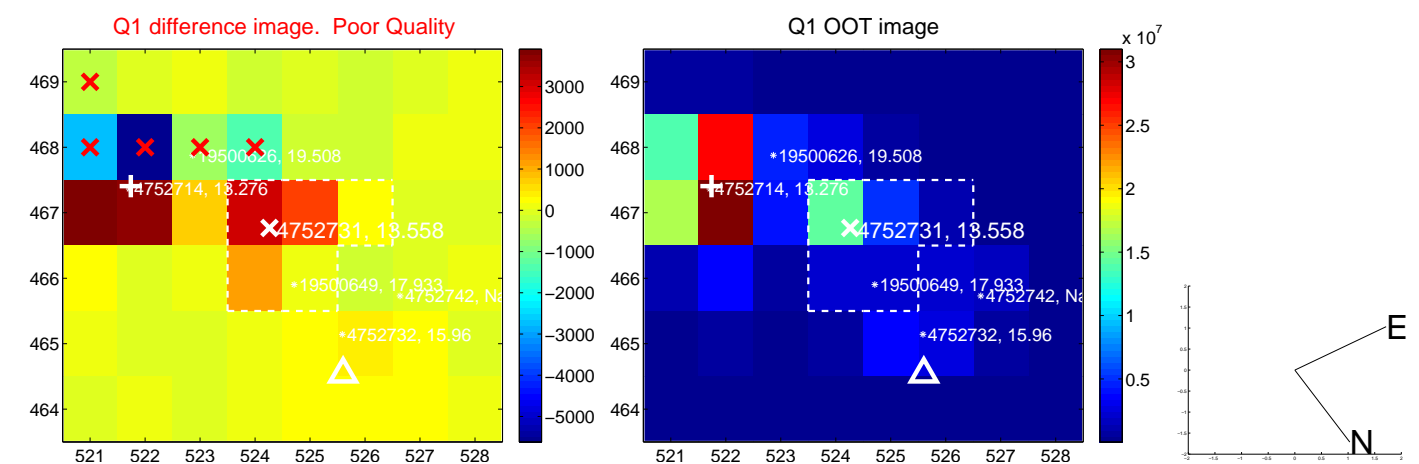
The OOT PRF centroid is offset from the target star catalog position by about 10.31 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.330 \pm 0.617	16.74	7.973 \pm 0.131	6.567 \pm 1.056
PRF-fit source offset from KIC position	0.991 \pm 0.618	1.60	0.732 \pm 0.105	-0.668 \pm 0.839
photometric centroid source offset	0.98 \pm 0.08	12.76	-0.66 \pm 0.07	-0.73 \pm 0.08

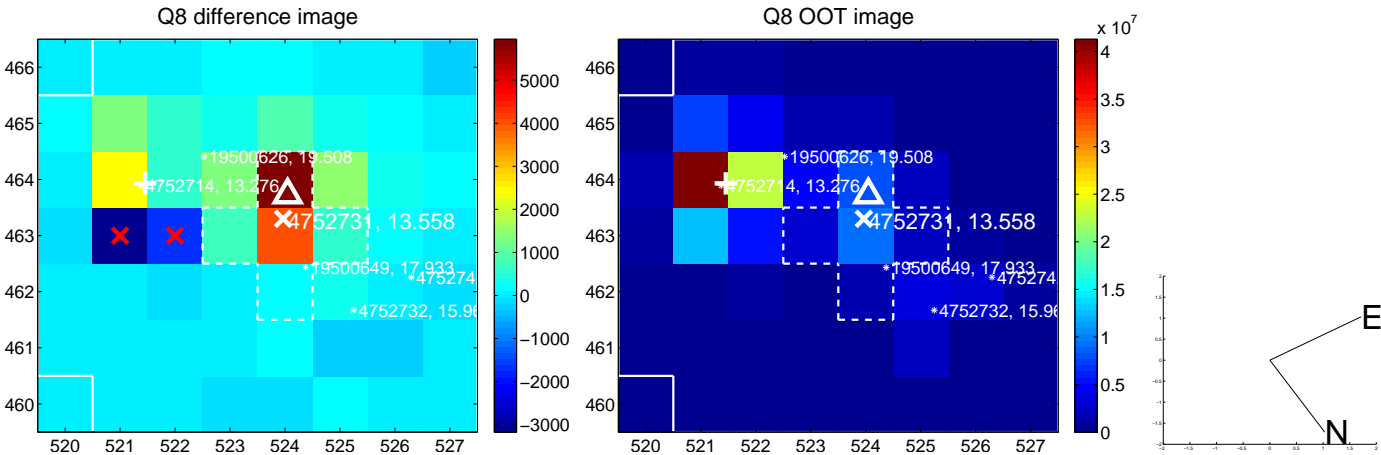
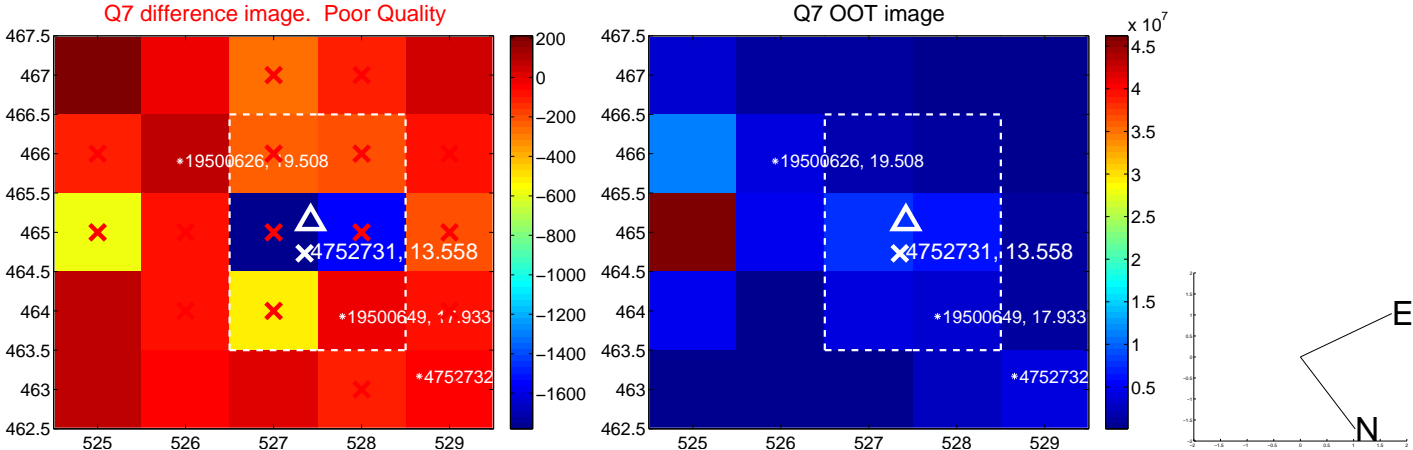
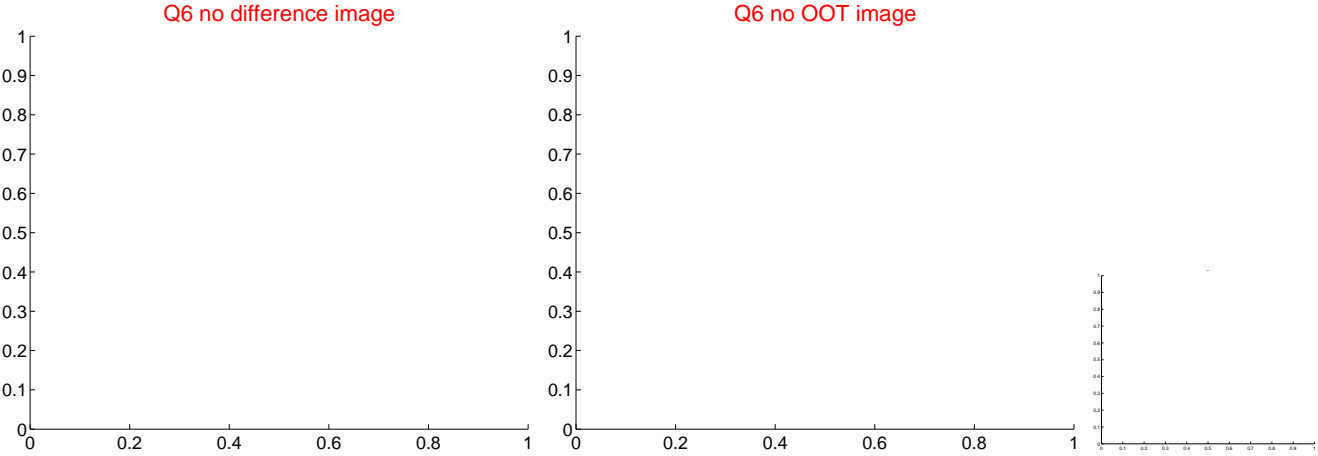
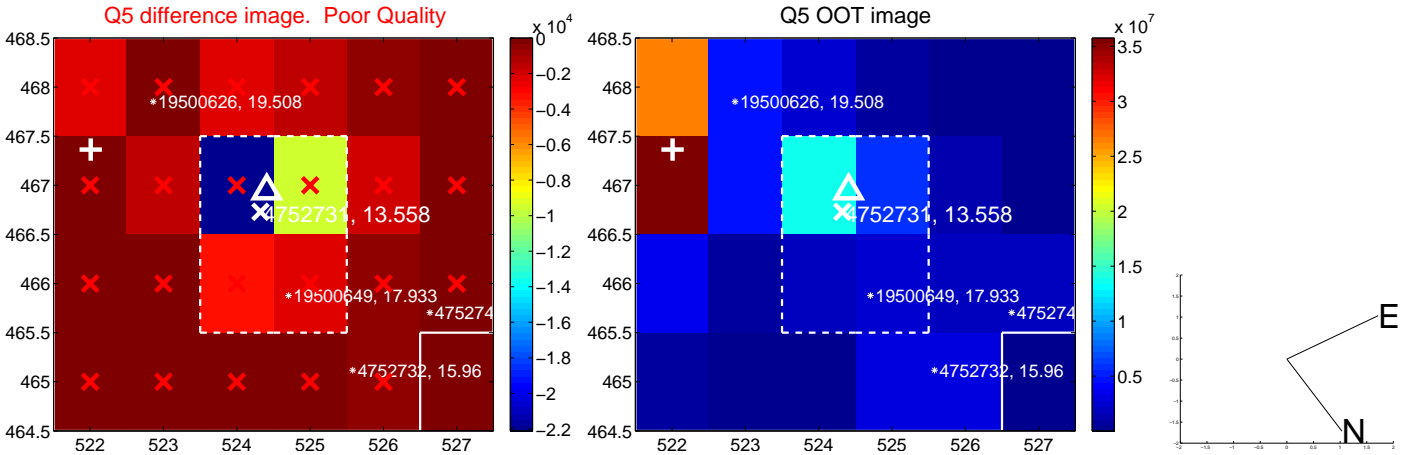


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

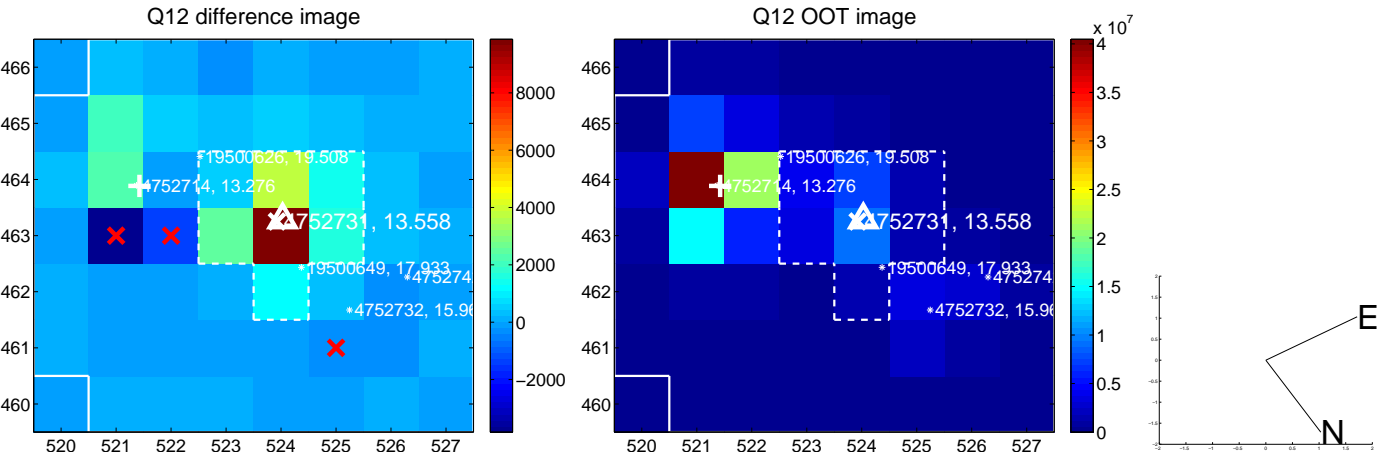
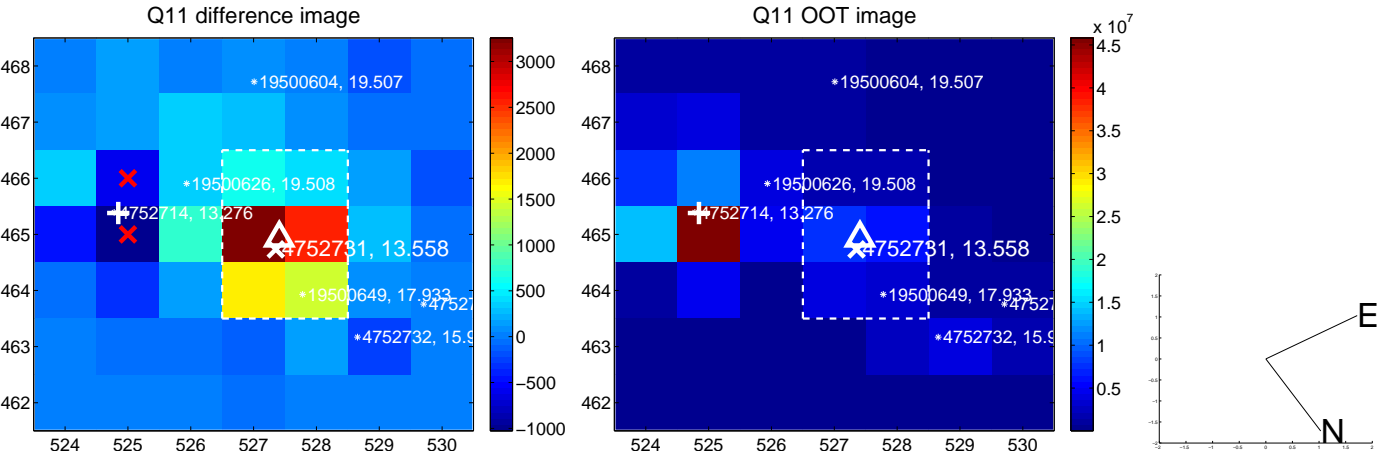
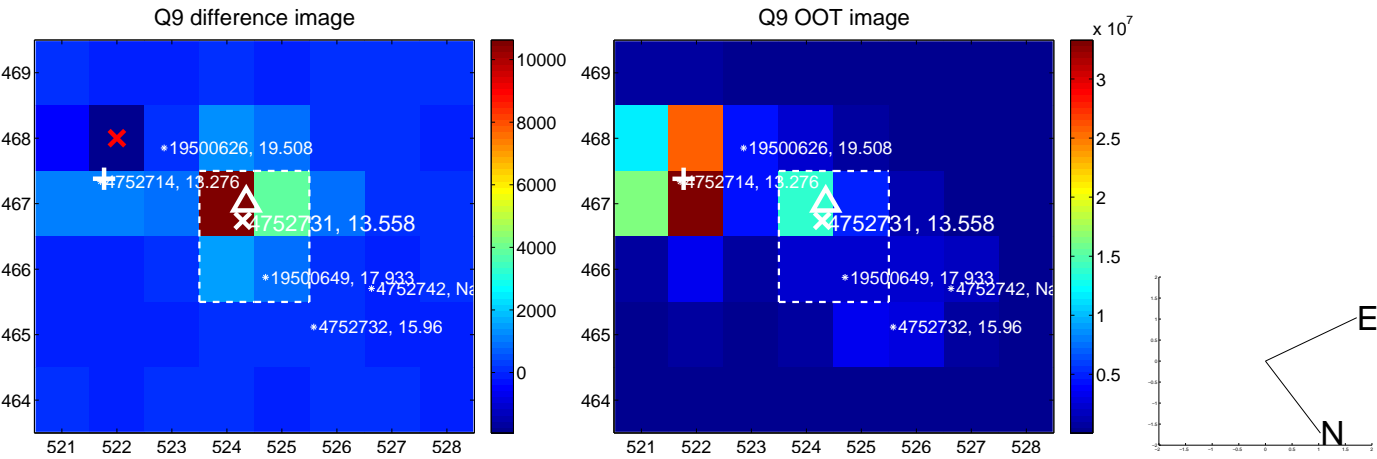
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



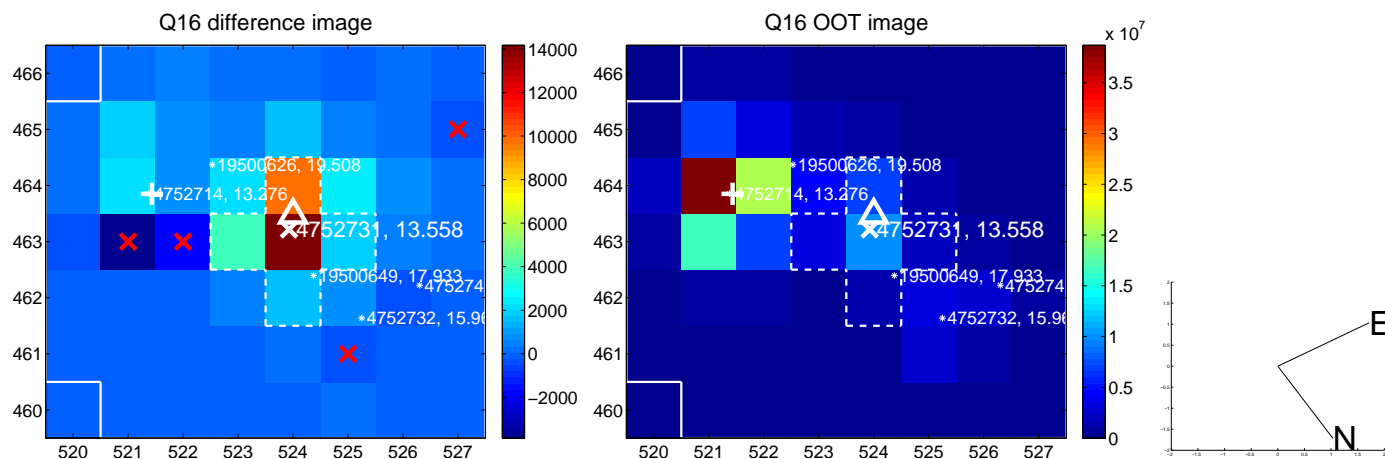
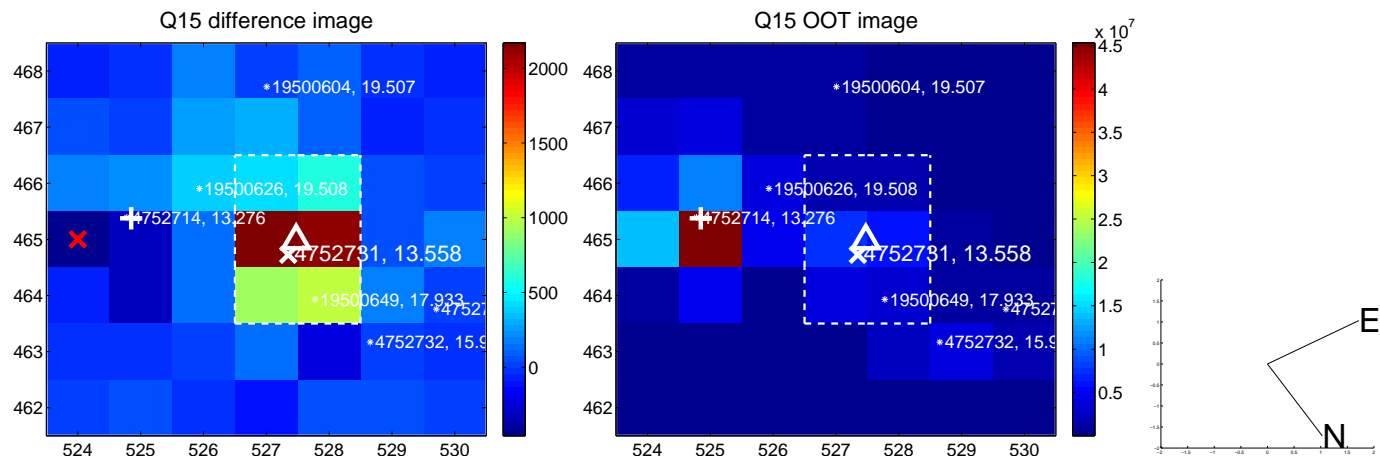
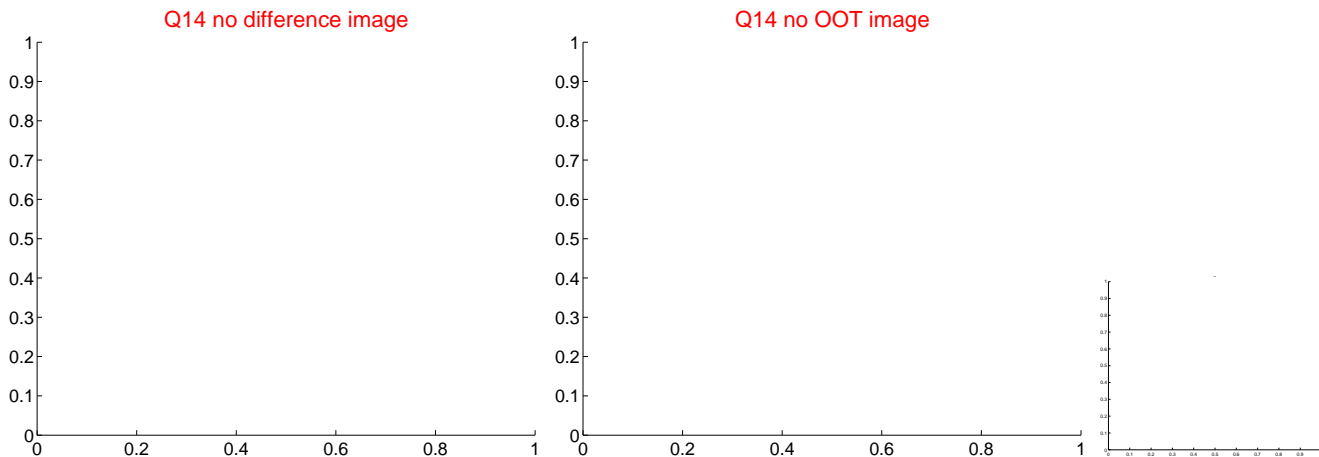
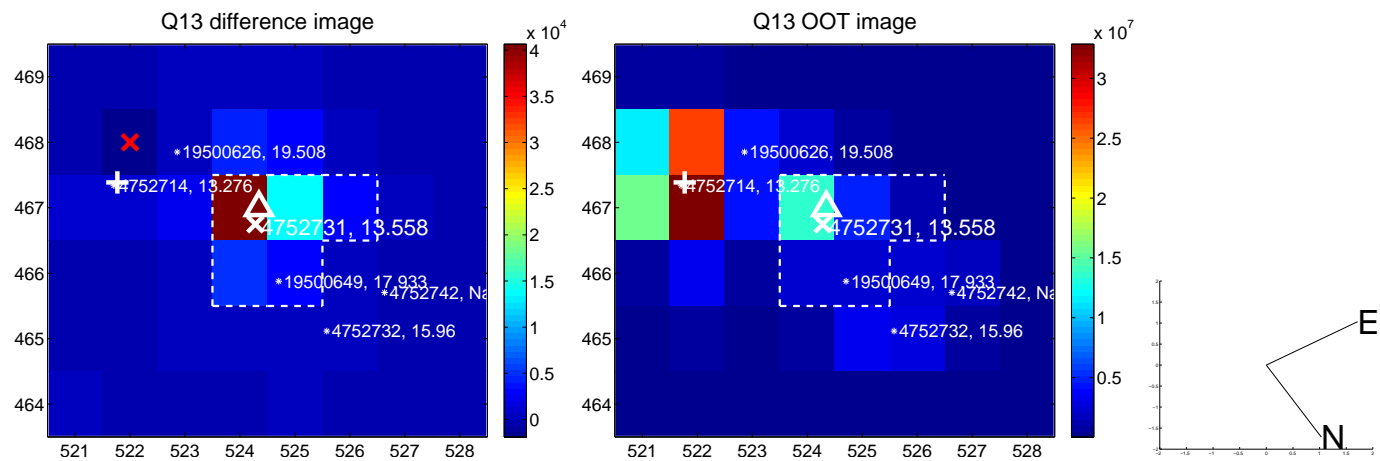
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



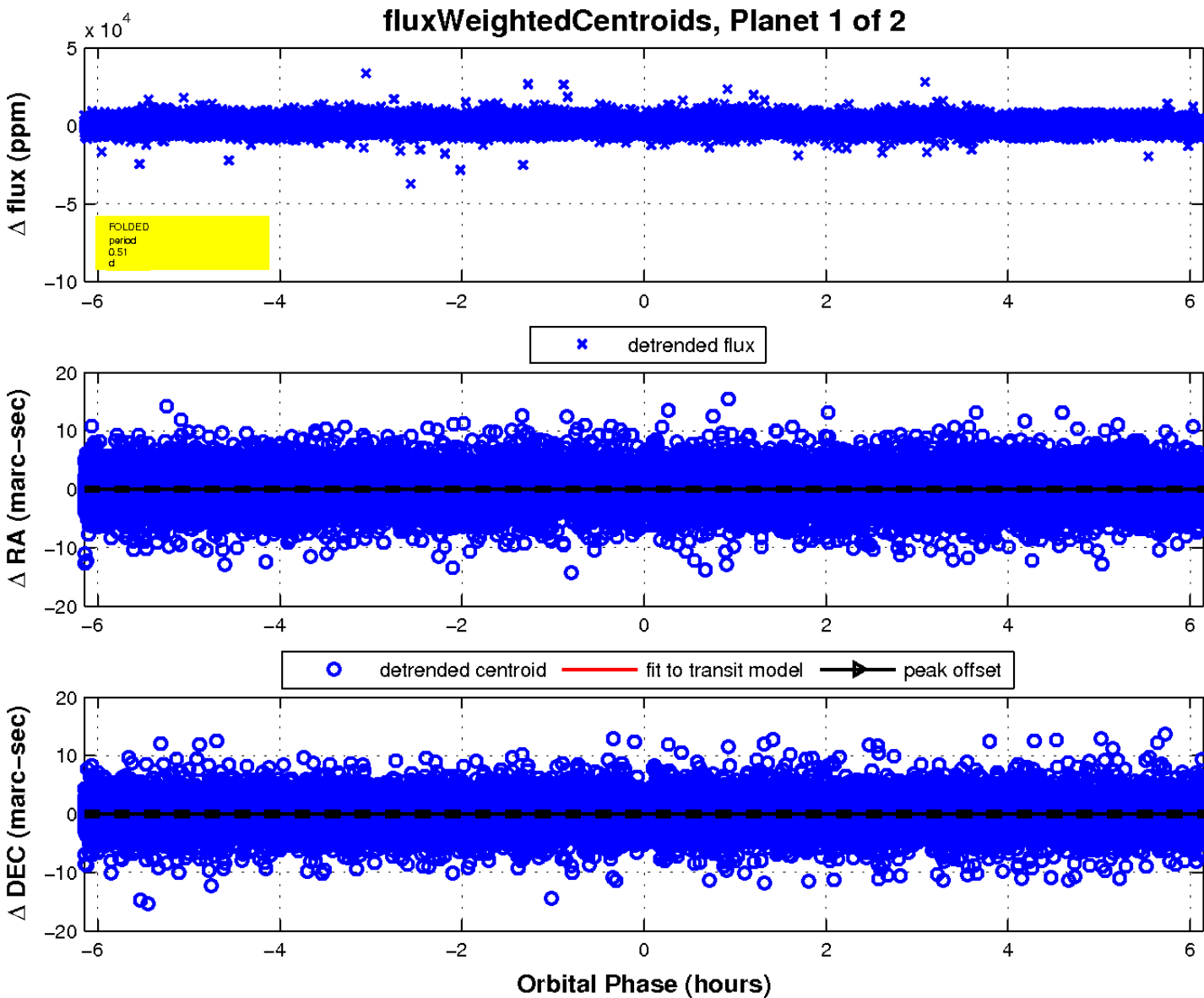
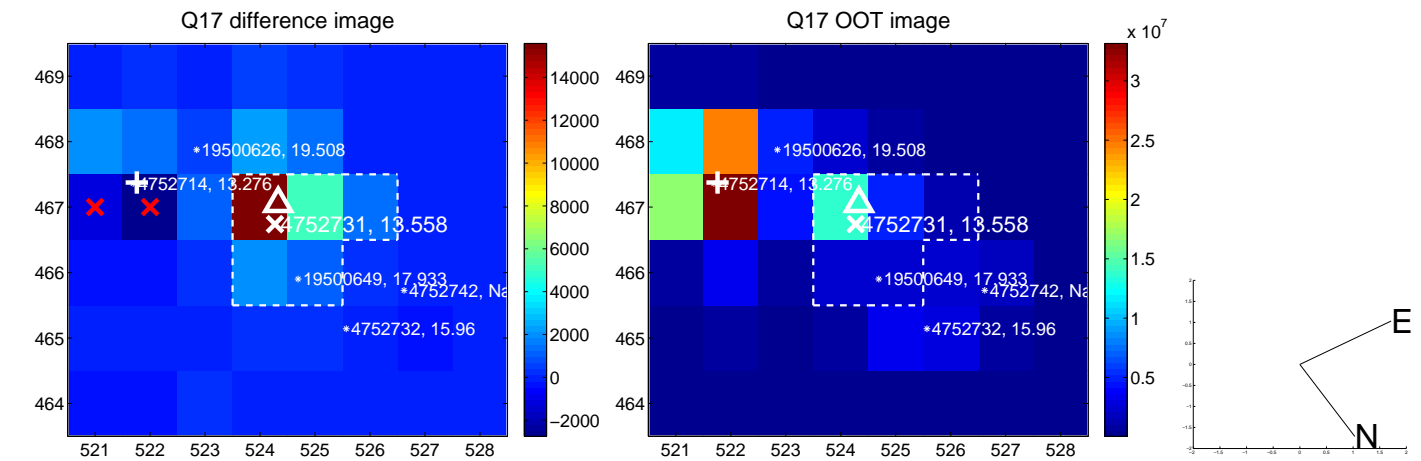
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

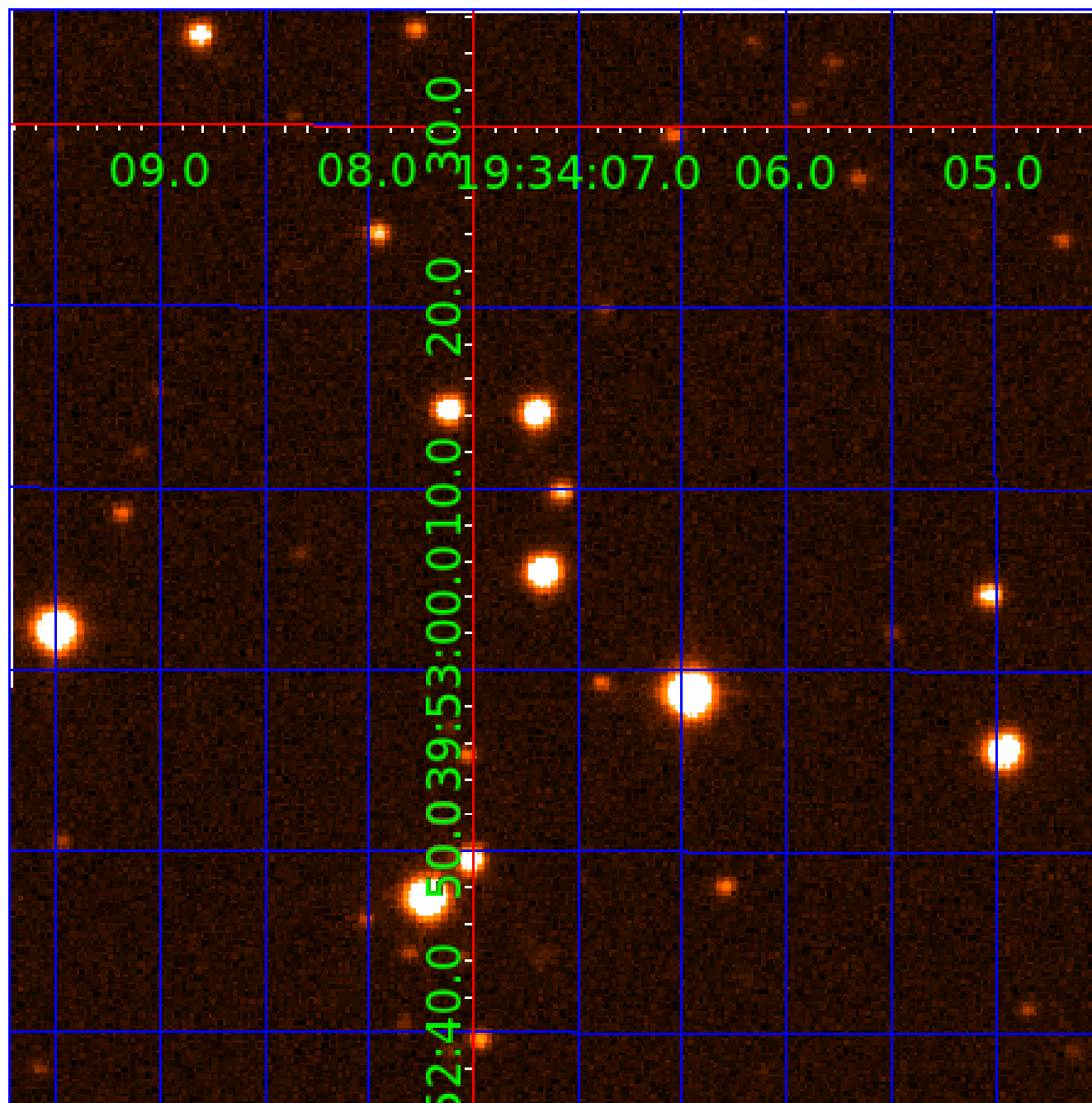


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004752731

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
004752731-01	OBS	No	0.512234	131.954744	1671.8	1.500	7.1	-1.0	1.80	6976	7.45	36494.99
004752731-02	OBS	No	0.512216	131.716930	198.3	1.173	8.0	7.3	1.80	6976	2.59	36496.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004752731-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS
004752731-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— SAME_NTL_PERIOD—CENT_KIC_POS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

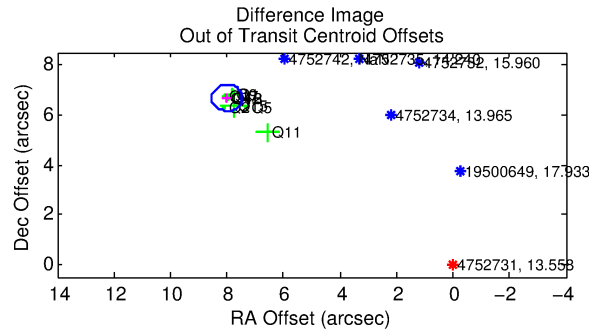
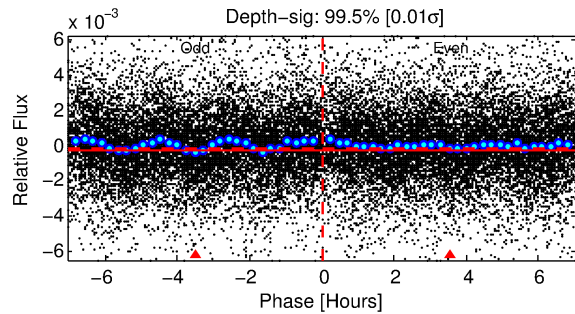
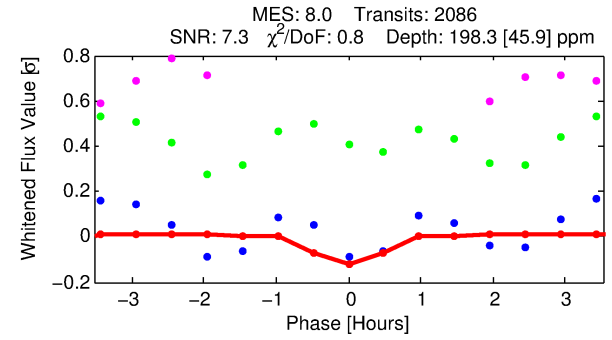
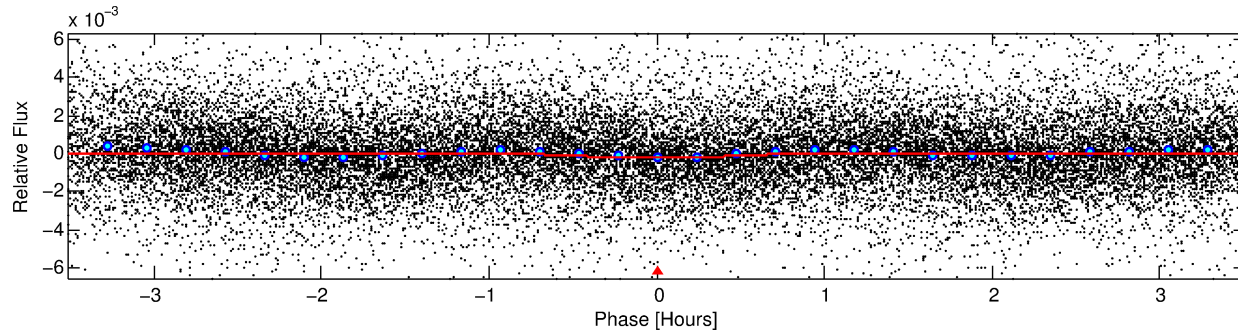
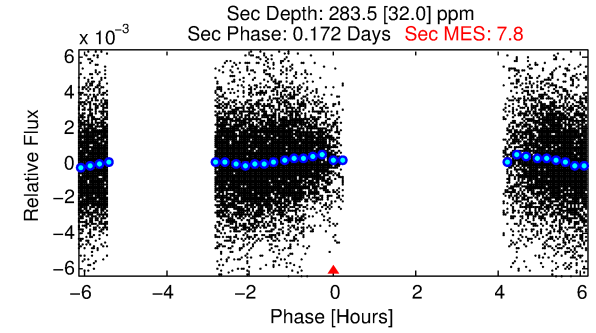
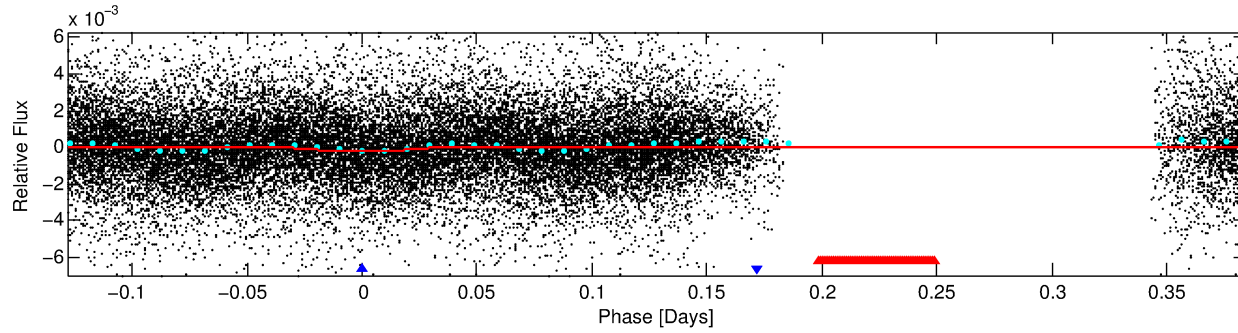
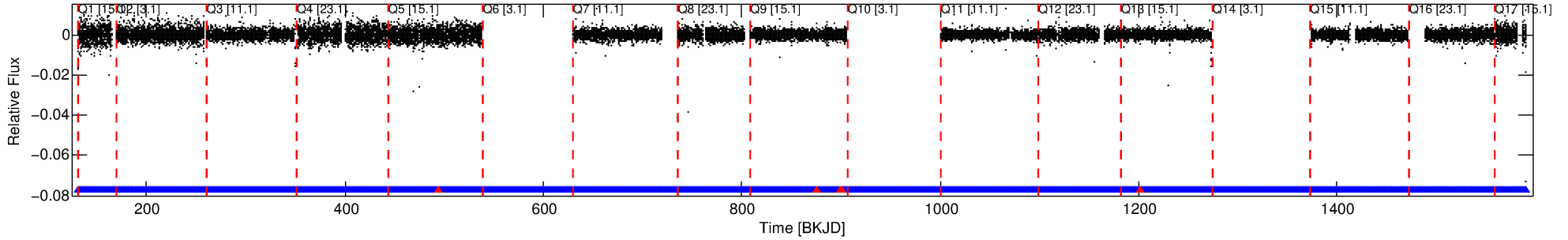
Ephemeris Match Information For 004752731-02

No Significant Match Found

DV One-Page Summary

KIC: 4752731 Candidate: 2 of 2 Period: 0.512 d

Kp: 13.56 R*: 1.80 Rs Teff: 6976.0 K Logg: 4.04 Fe/H: -0.500



DV Fit Results:

Period = 0.51222 [0.00002] d
Epoch = 131.7169 [0.0027] BKJD
Rp/R* = 0.0132 [0.0148]
a/R* = 3.29 [18.79]
b = 0.30 [18.96]
Seff = 36496.68 [18743.07]
Teff = 3524 [452] K
Rp = 2.59 [3.02] Re
a = 0.0137 [0.0042] AU
Ag = 4.36 [9.97] [0.34σ]
Teffp = 7873 [4417] K [0.98σ]

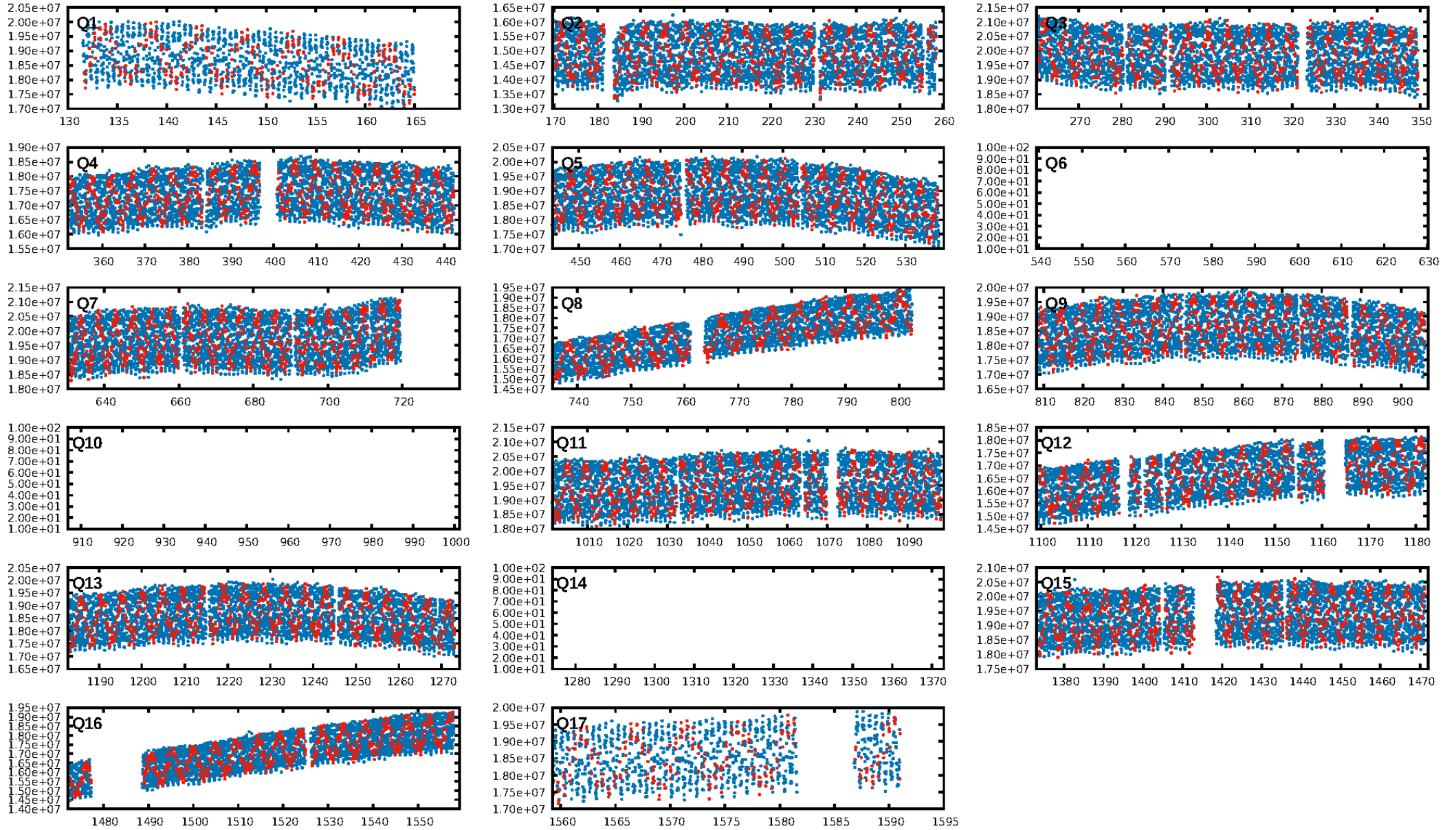
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.12e-29
RollingBand-fgt: 1.00 [1962/1967]
GhostDiagnostic-chr: 0.4562
Centroid-sig: 84.6%
Centroid-so: 0.953 arcsec [2.48σ]
OotOffset-rm: 10.419 arcsec [58.72σ]
KicOffset-rm: 0.978 arcsec [11.64σ]
OotOffset-st: 1/2/3/5 [11]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 0.00 [0/14]

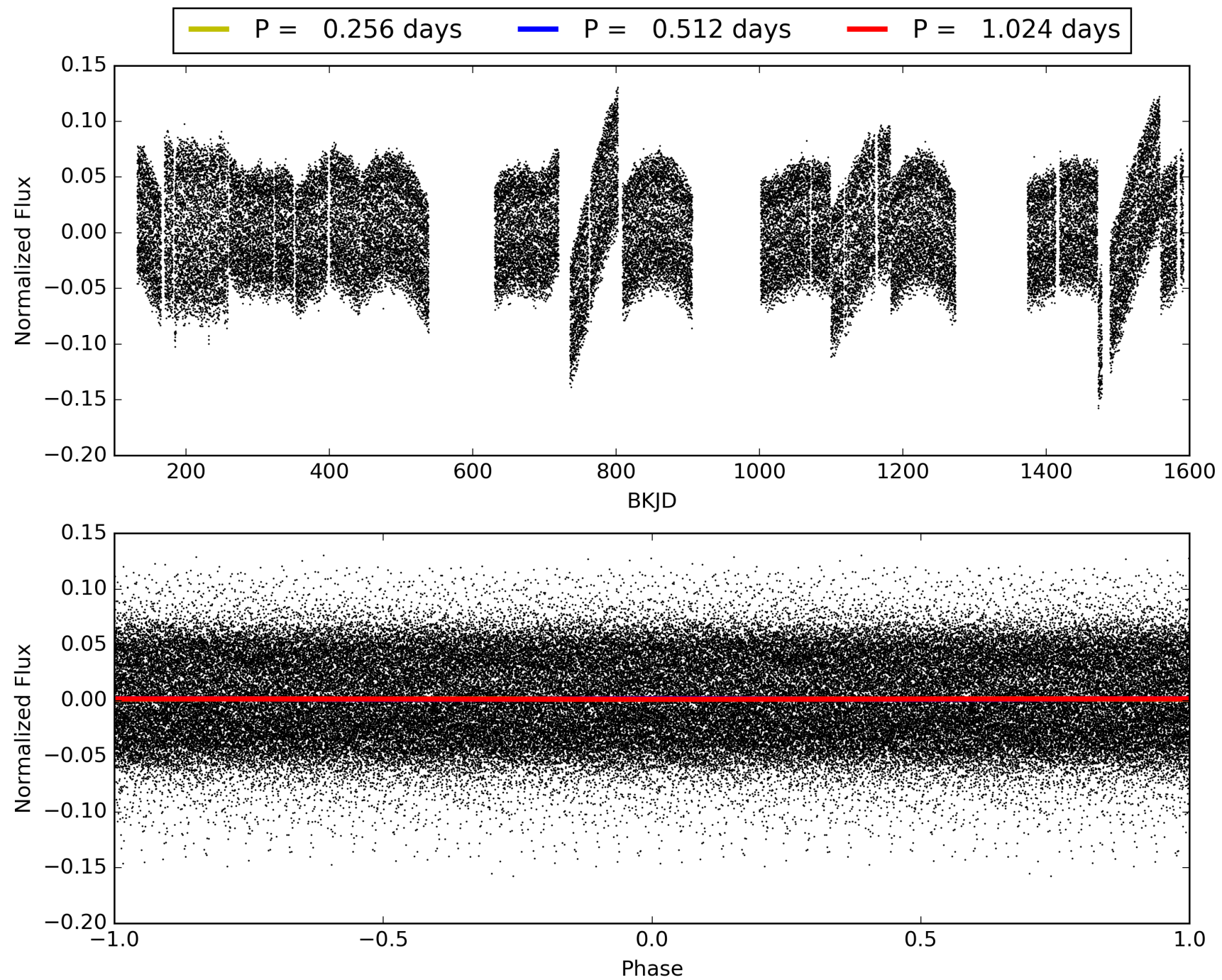
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:01:24 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004752731-02, PDC Light Curves

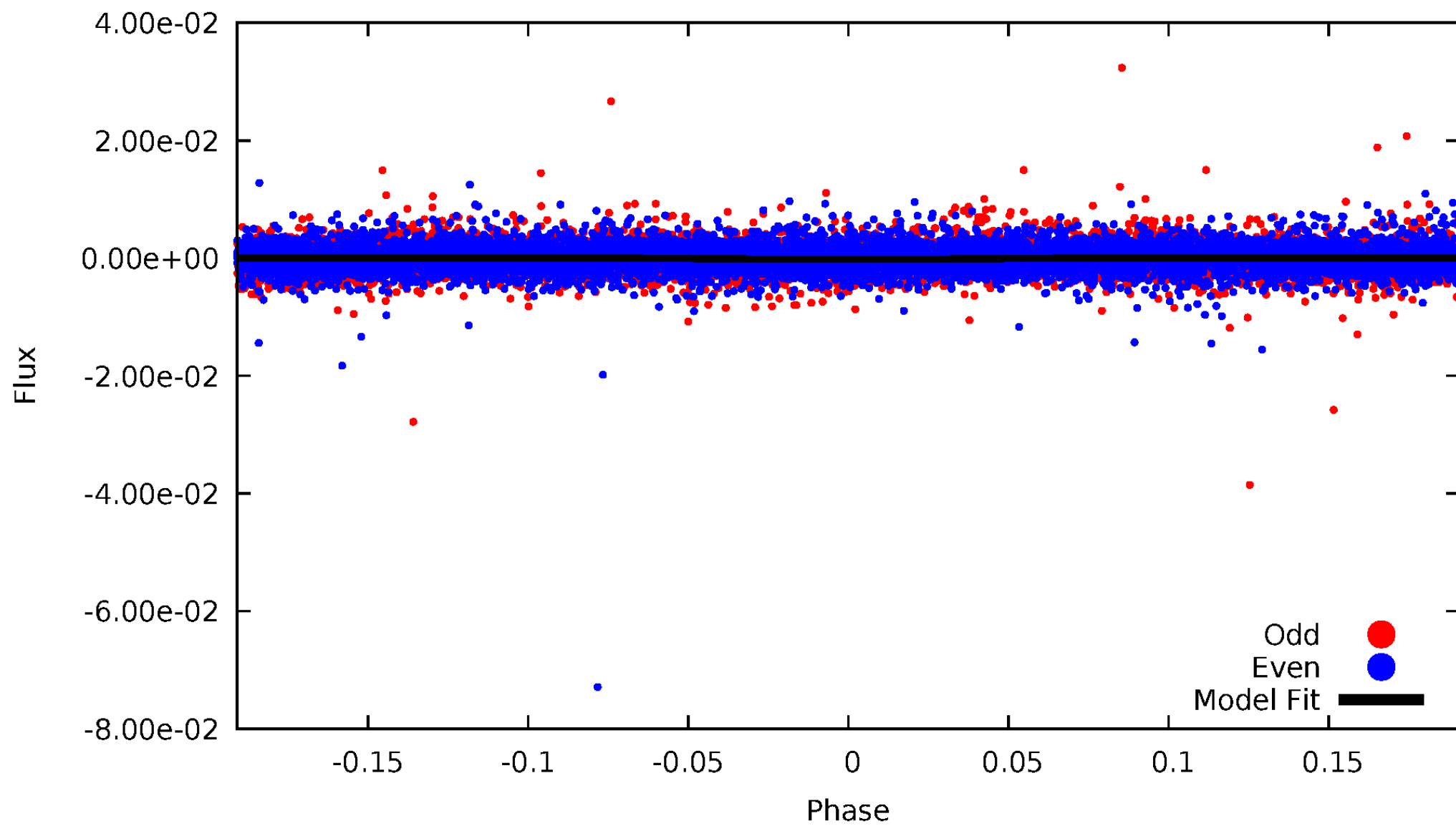


TCE 004752731-02



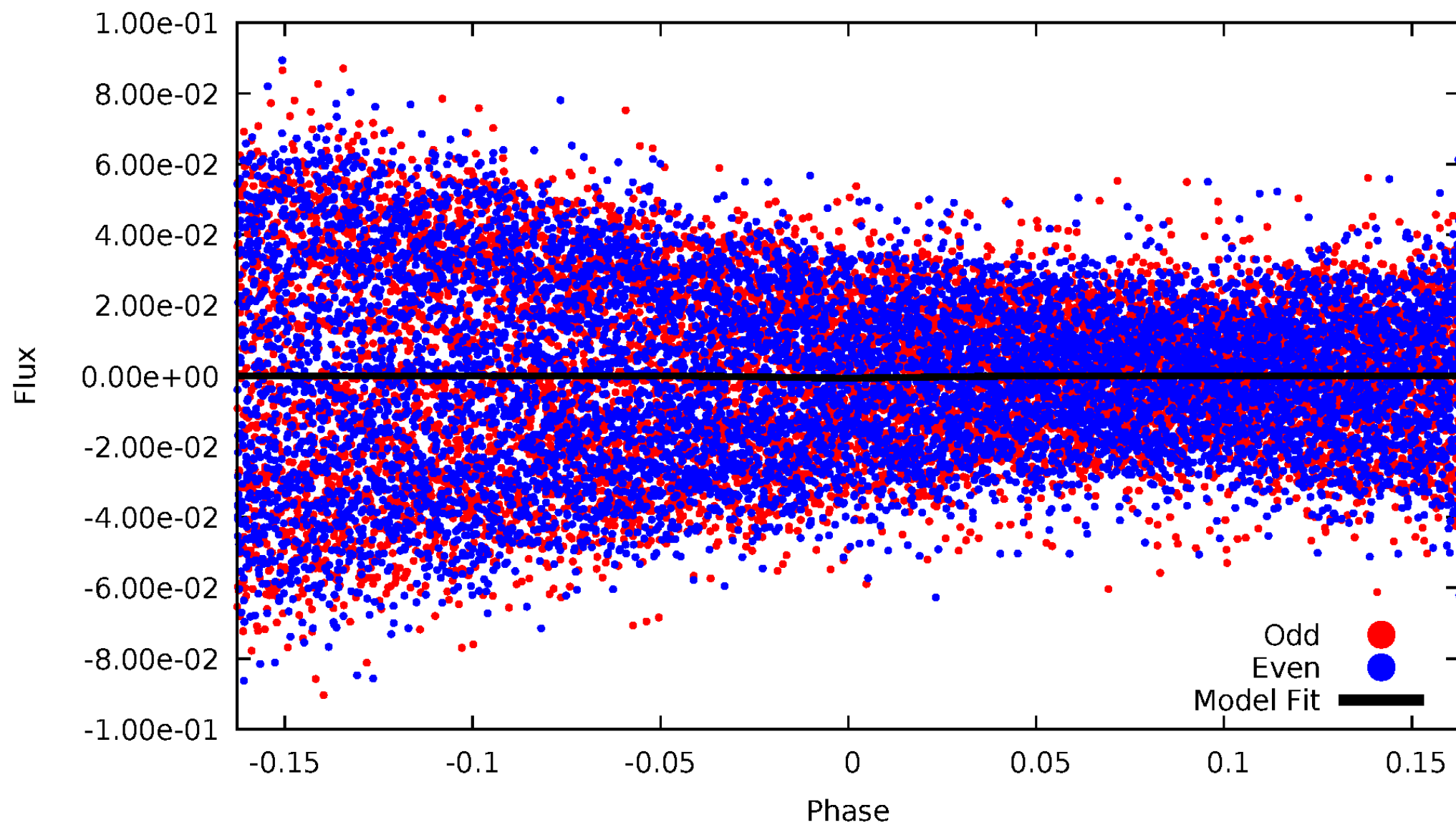
DV Odd/Even

TCE 004752731-02



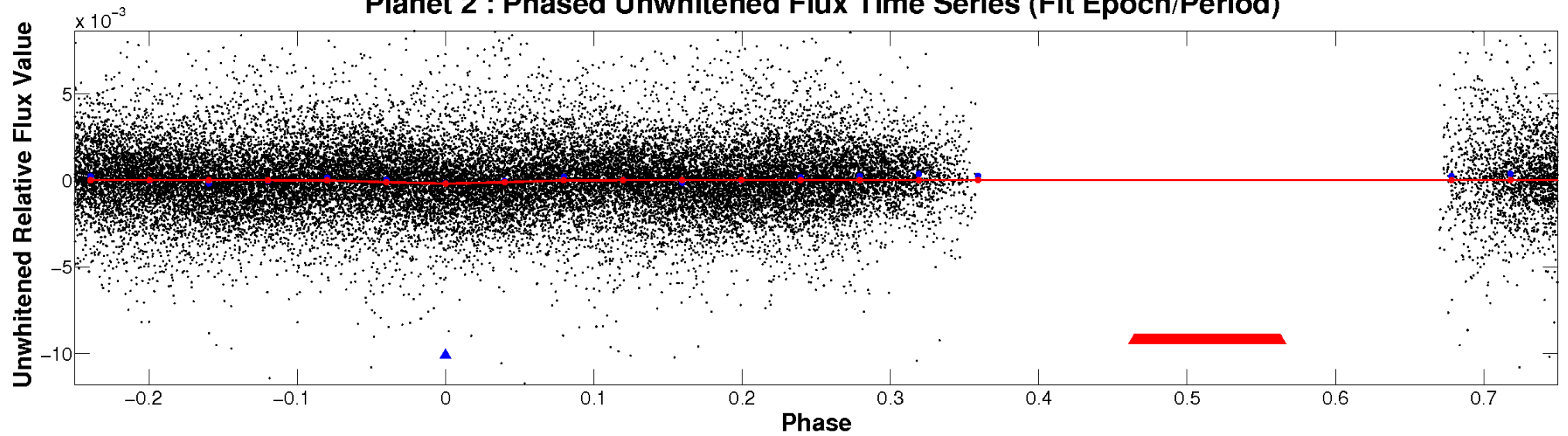
ALT Odd/Even

TCE 004752731-02

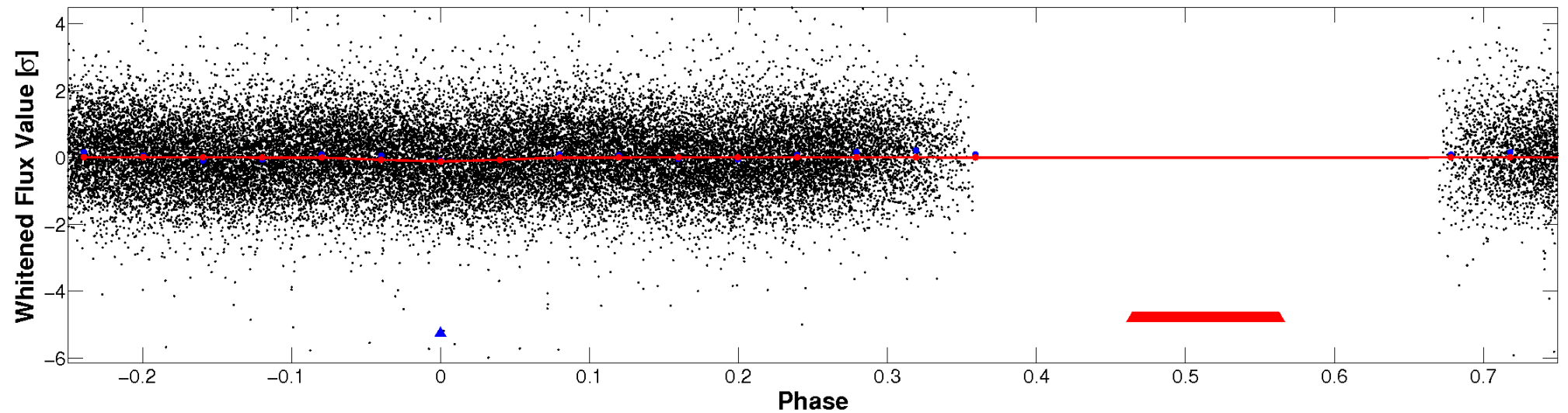


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

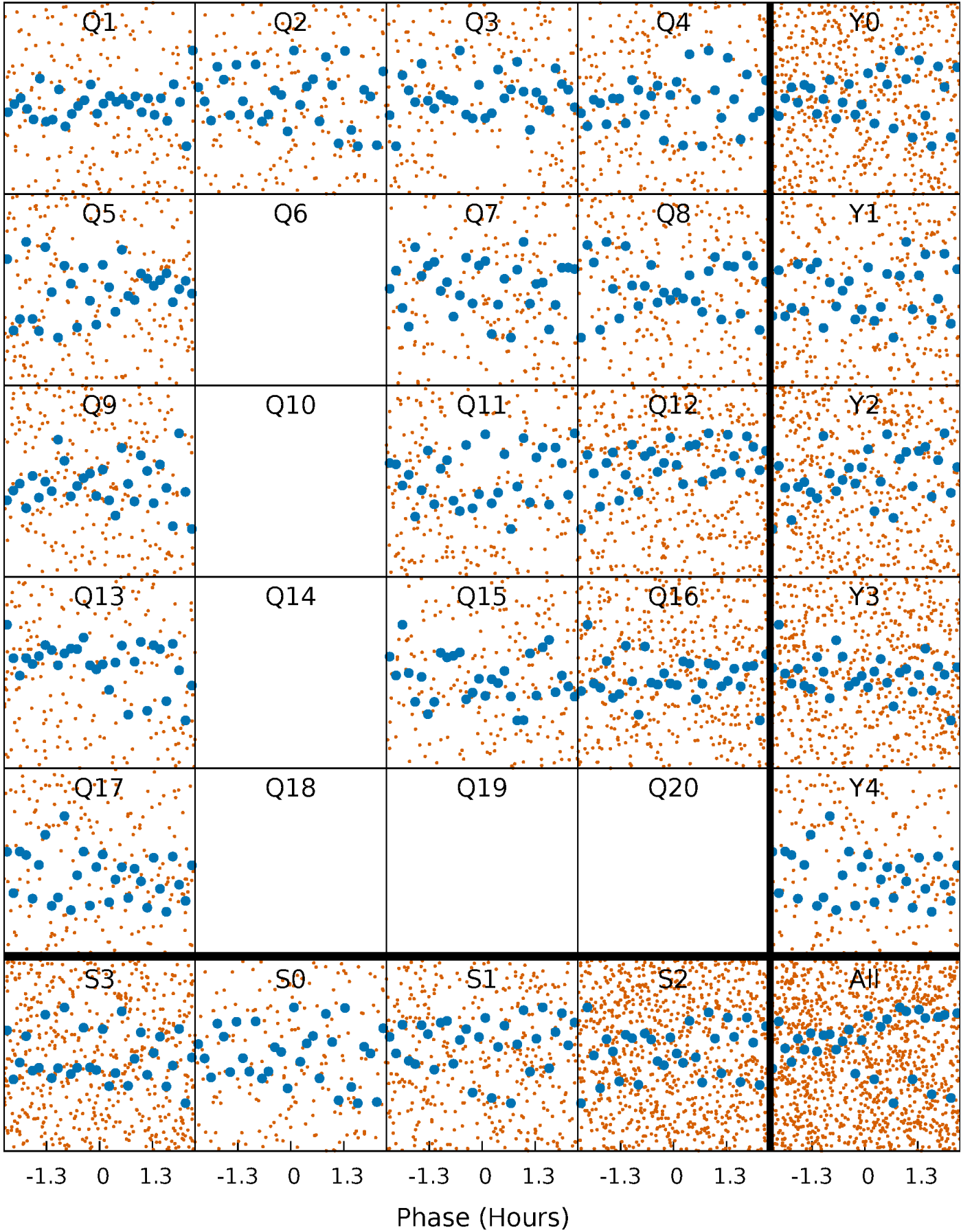


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



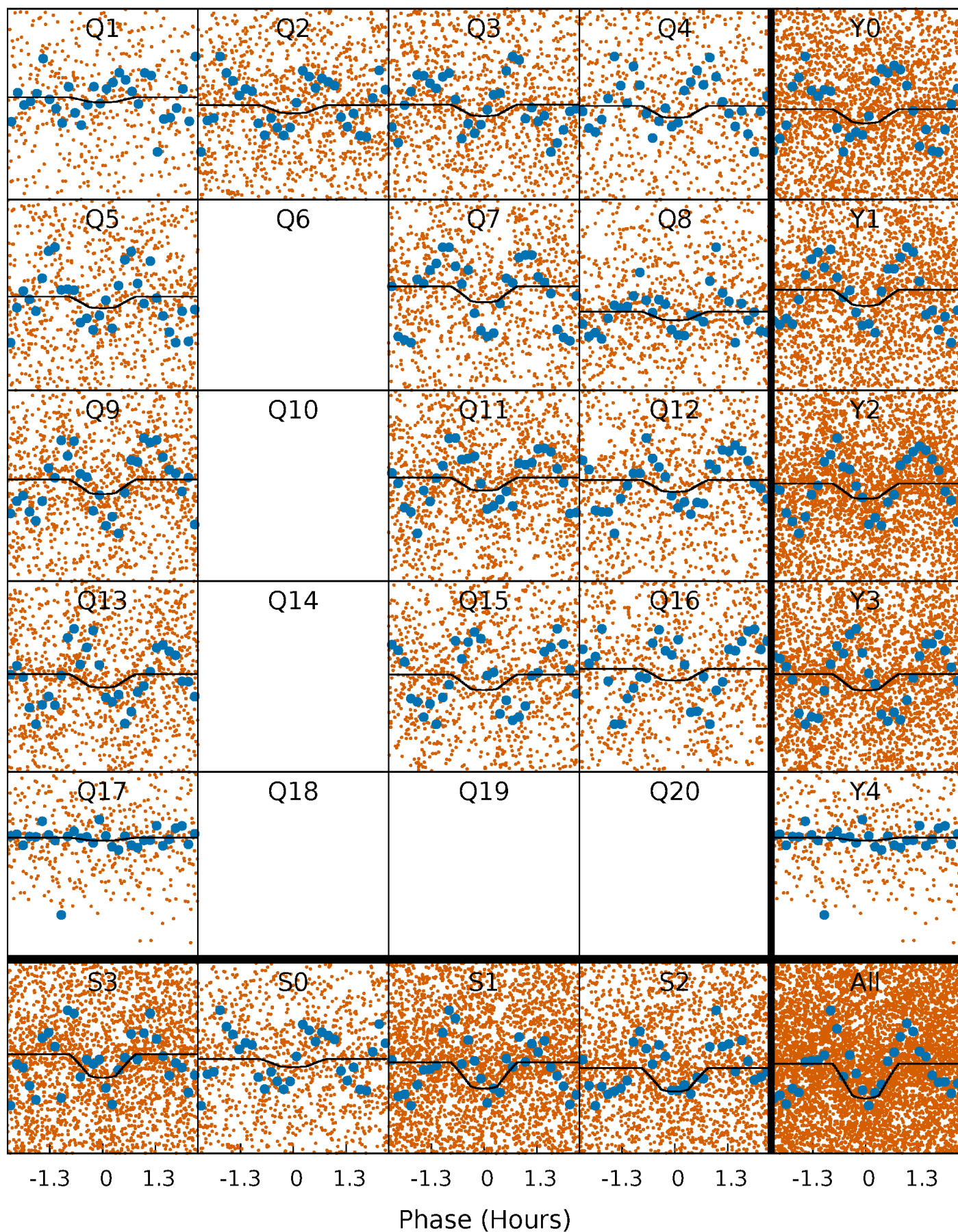
PDC Quarter-Phased Transit Curves

TCE 004752731-02 P= 0.512216 Days $T_0=131.716930$ (BKJD)



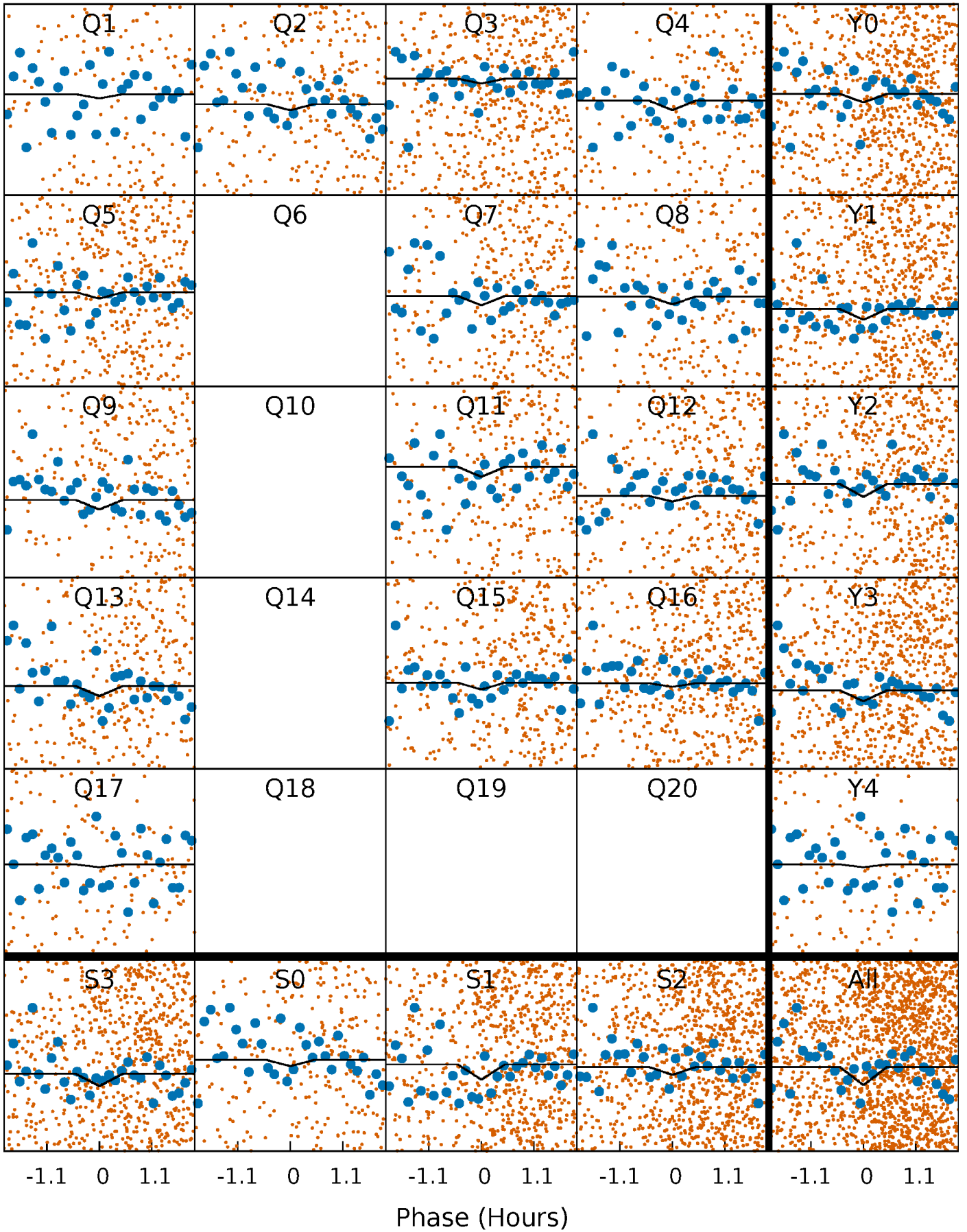
DV Quarter-Phased Transit Curves

TCE 004752731-02 P= 0.512216 Days $T_0=131.716930$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

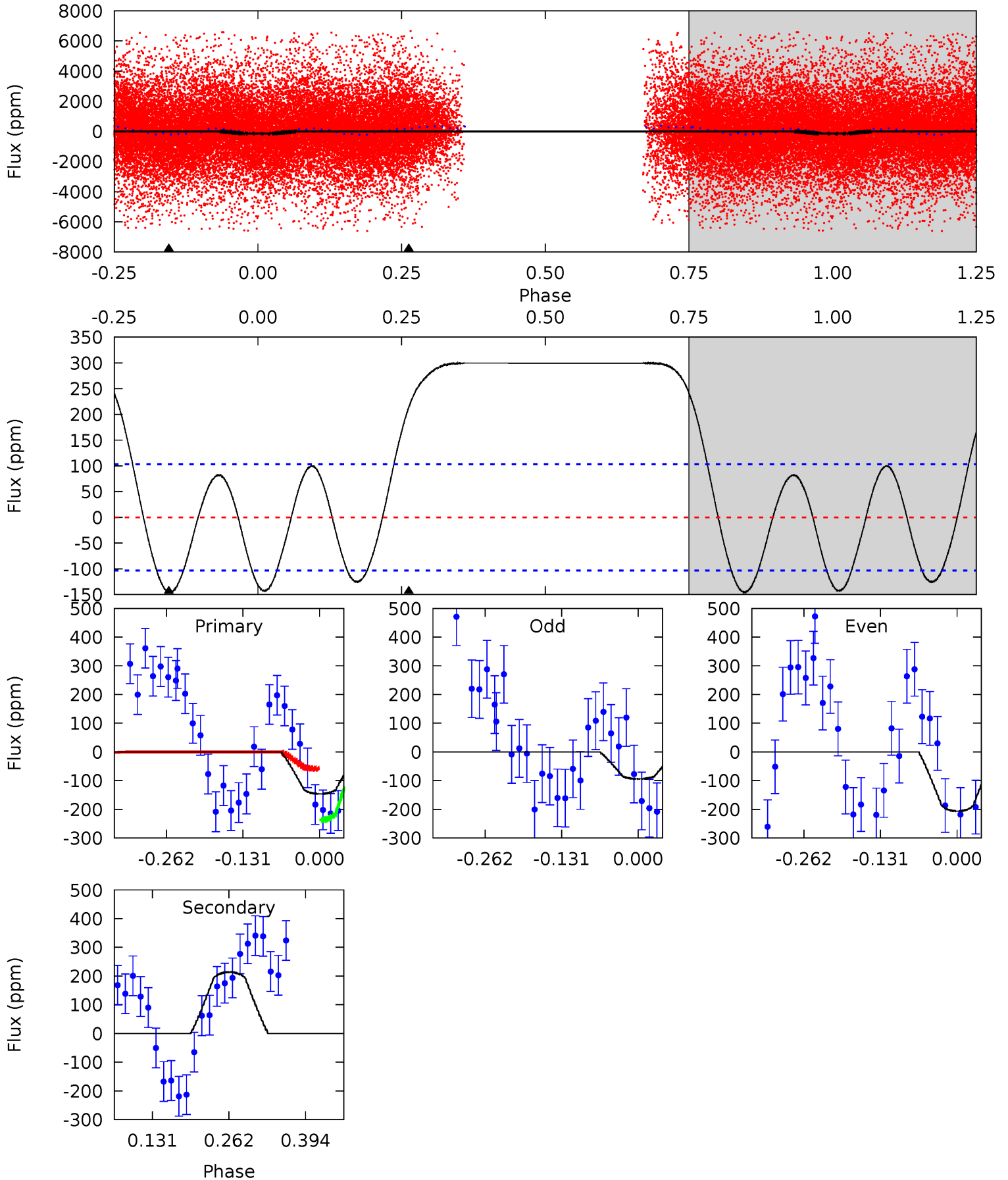
TCE 004752731-02 $P = 0.512234$ Days $T_0 = 131.708308$ (BKJD)



DV Model-Shift Uniqueness Test

004752731-02, P = 0.512216 Days, E = 131.204714 Days

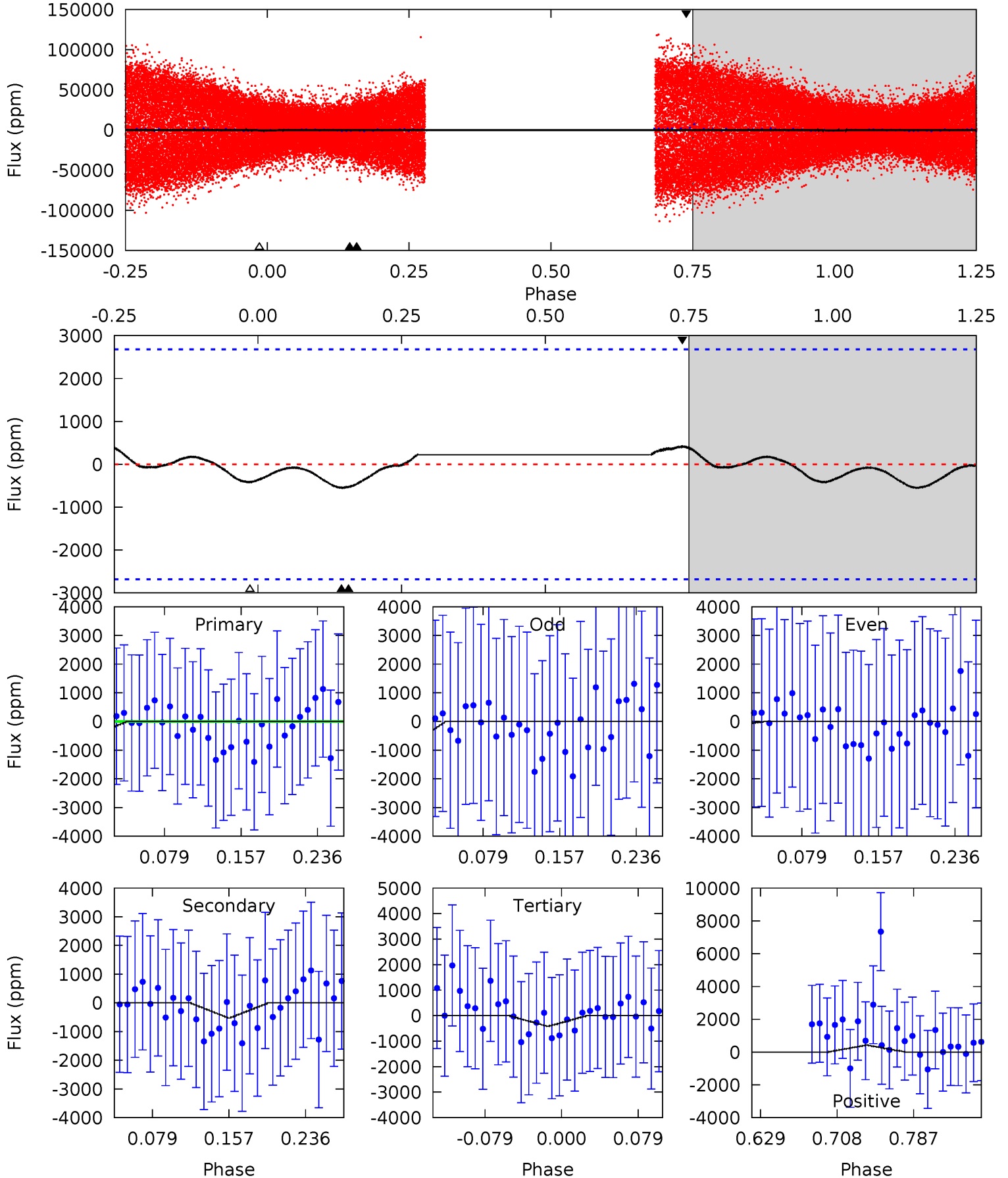
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.38	-9.33	0	0	4.51	1.51	5.17	6.38	6.38	-9.33	-9.33	2.43	0.66	0.67	4.03



Alt Model-Shift Uniqueness Test

004752731-02, P = 0.512234 Days, E = 131.196074 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.95	0.91	0.72	0.73	4.61	1.76	0.39	0.22	0.22	0.19	0.18	0.60	0.47	0.43	1.02



Stellar Parameters For KIC 004752731

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6976^{+216}_{-312}	$4.045^{+0.280}_{-0.151}$	$-0.500^{+0.250}_{-0.300}$	$1.796^{+0.478}_{-0.584}$	$1.305^{+0.179}_{-0.247}$	$0.317^{+0.601}_{-0.138}$
	+3%/-4%	+7%/-4%	+50%/-60%	+27%/-33%	+14%/-19%	+190%/-44%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004752731-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	214 ± 23	$3.33^{+2.50}_{-2.17}$	4849^{+372}_{-449}	-6457^{+1146}_{-5608}	$-1.963^{+1.351}_{-14.222}$
Alt.	-530 ± 581	$4.80^{+3.07}_{-2.46}$	4849^{+386}_{-454}	5969^{+4784}_{-10290}	$1.959^{+9.309}_{-2.005}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

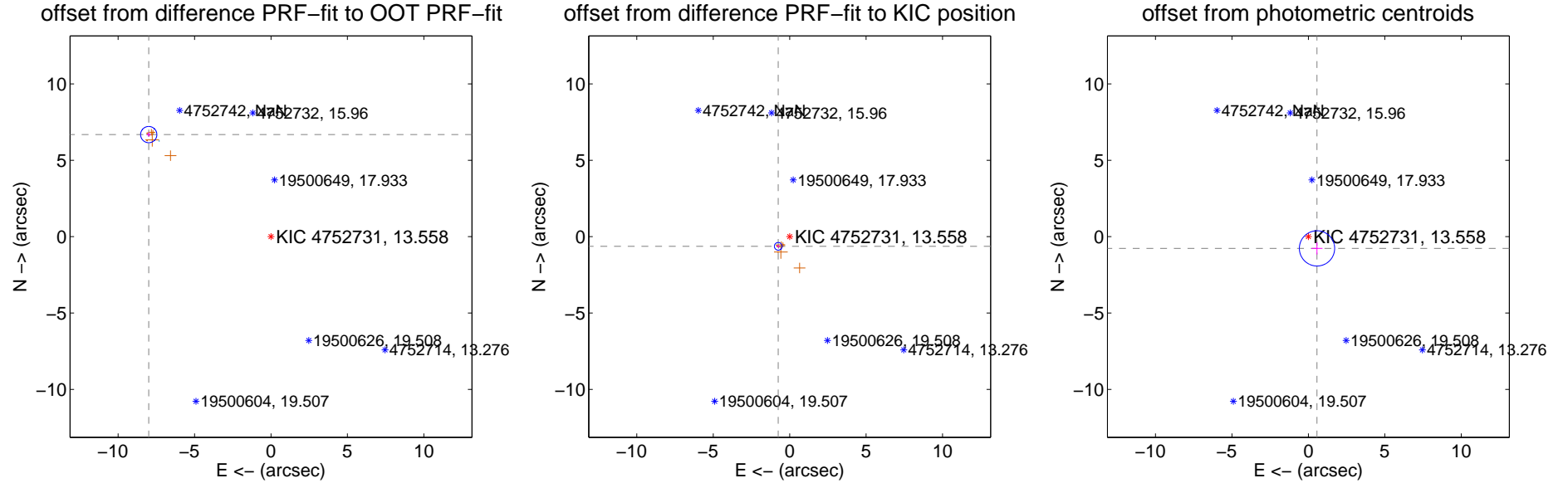
DV Centroid Data

Supplemental centroid analysis for 004752731-02. Kepler magnitude: 13.56. Transit SNR 7.33

There are 4 quarters with good PRF difference image offsets

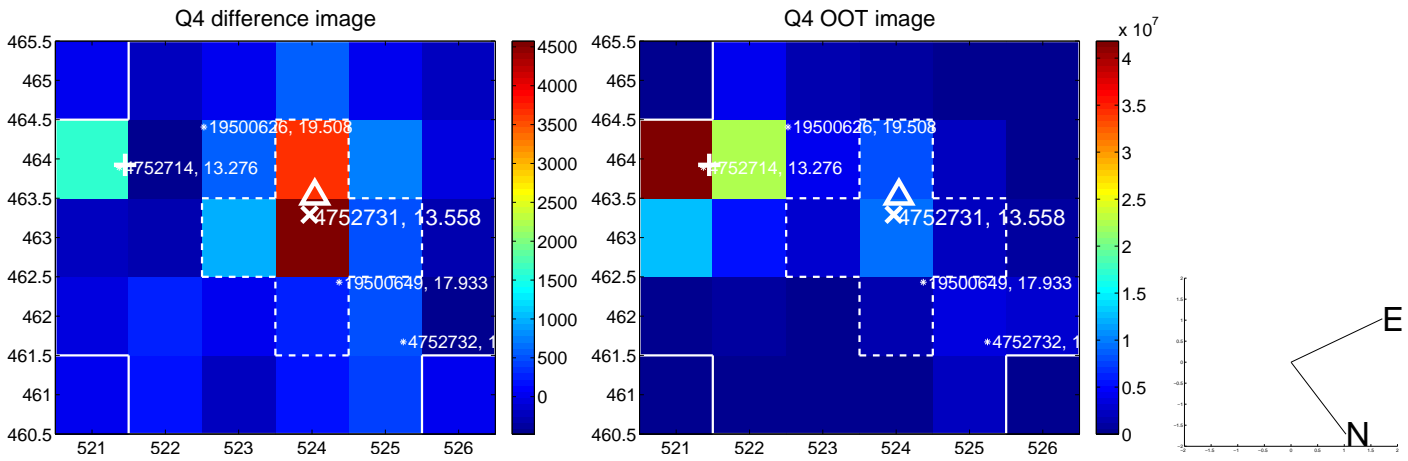
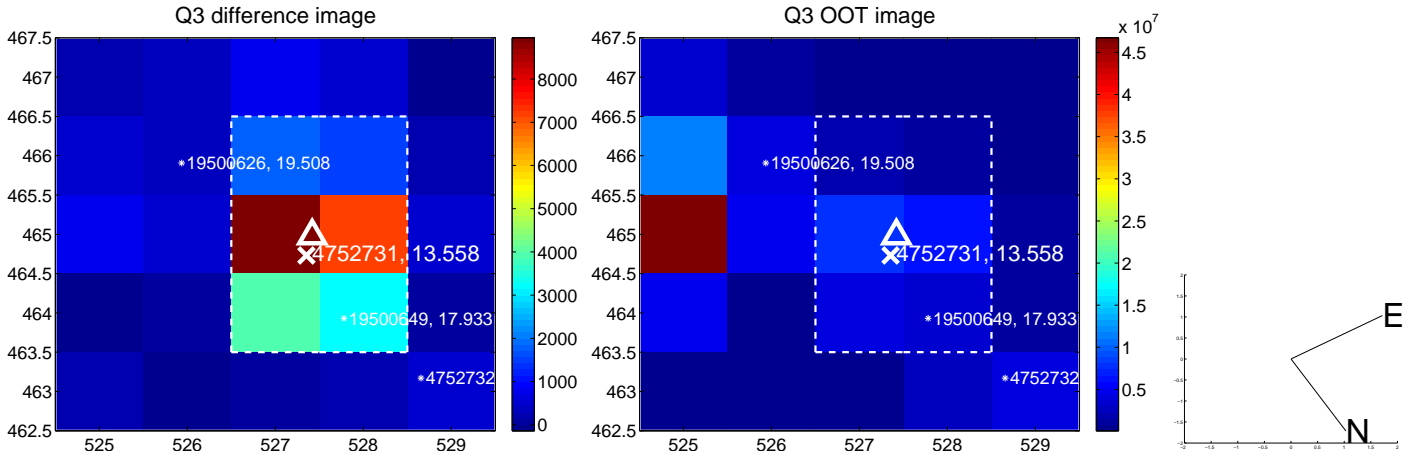
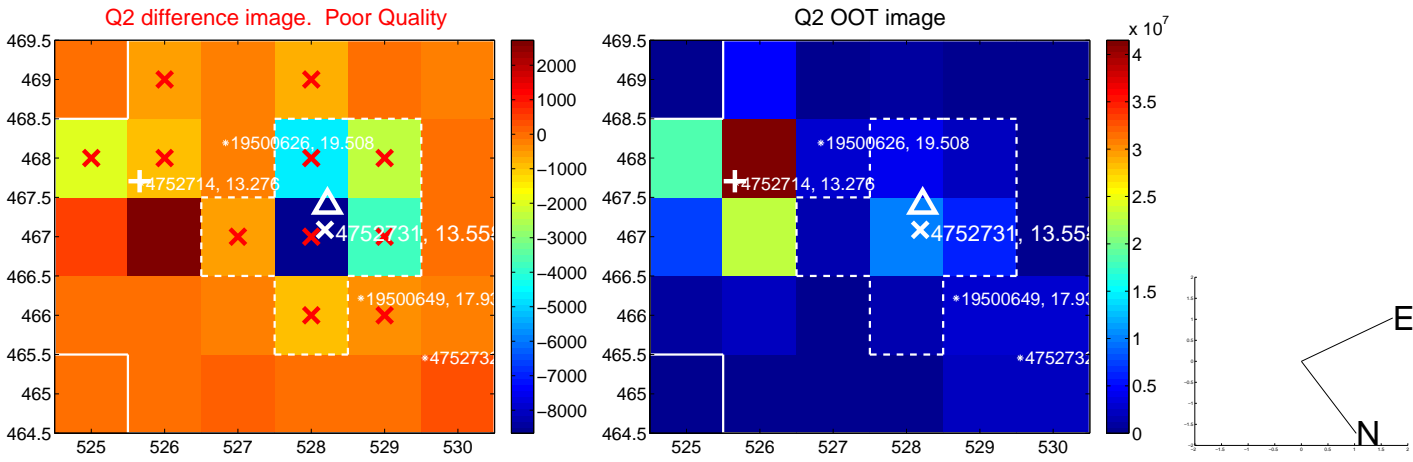
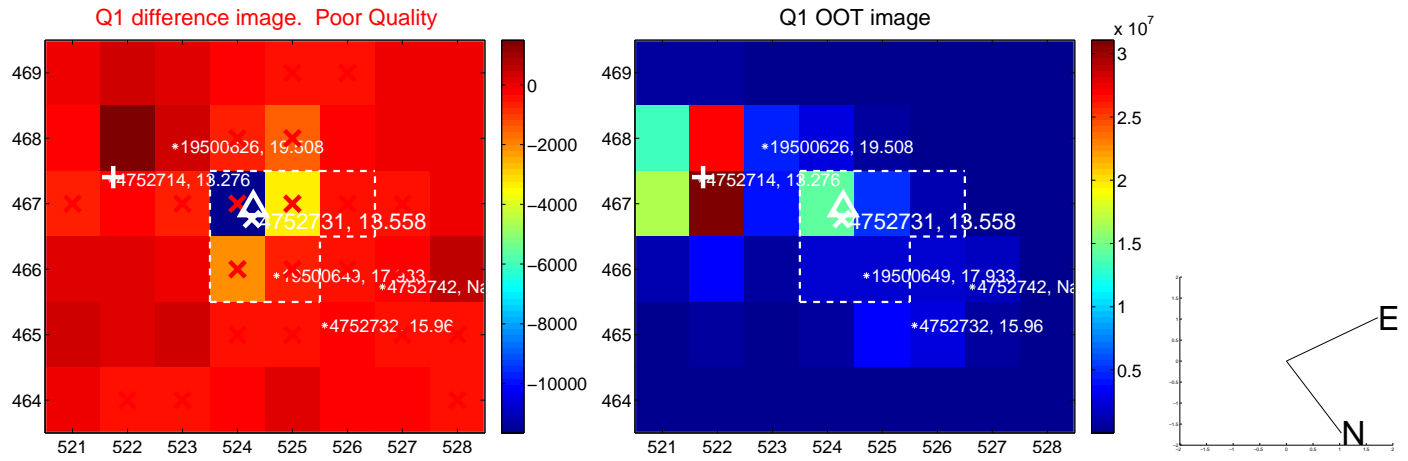
The OOT PRF centroid is offset from the target star catalog position by about 10.31 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.419 \pm 0.177	58.72	7.995 \pm 0.137	6.681 \pm 0.142
PRF-fit source offset from KIC position	0.978 \pm 0.084	11.64	0.746 \pm 0.084	-0.633 \pm 0.084
photometric centroid source offset	0.95 \pm 0.38	2.48	-0.57 \pm 0.36	-0.77 \pm 0.40

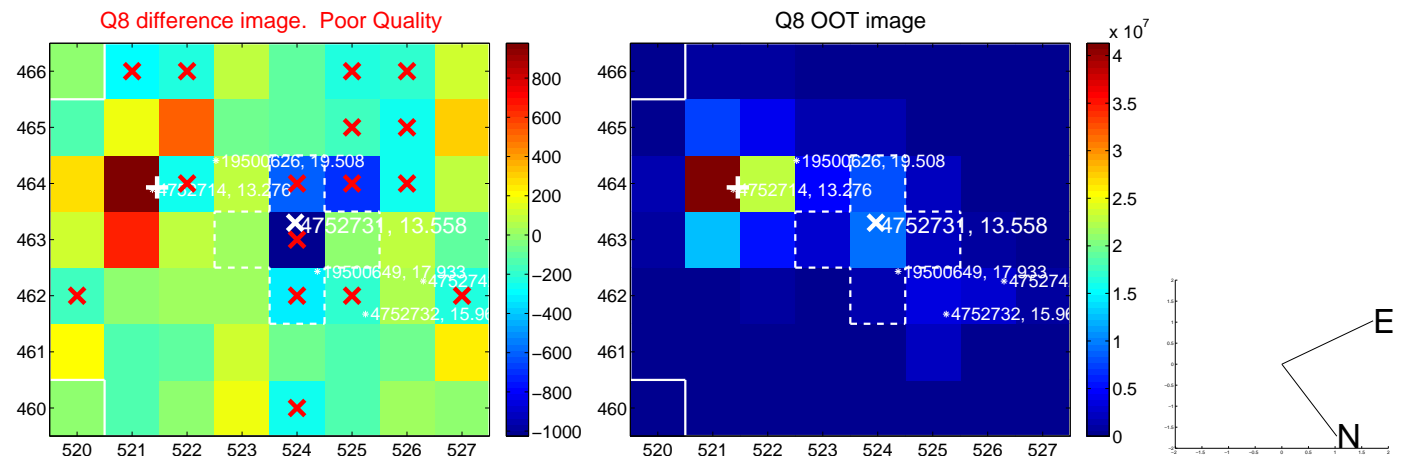
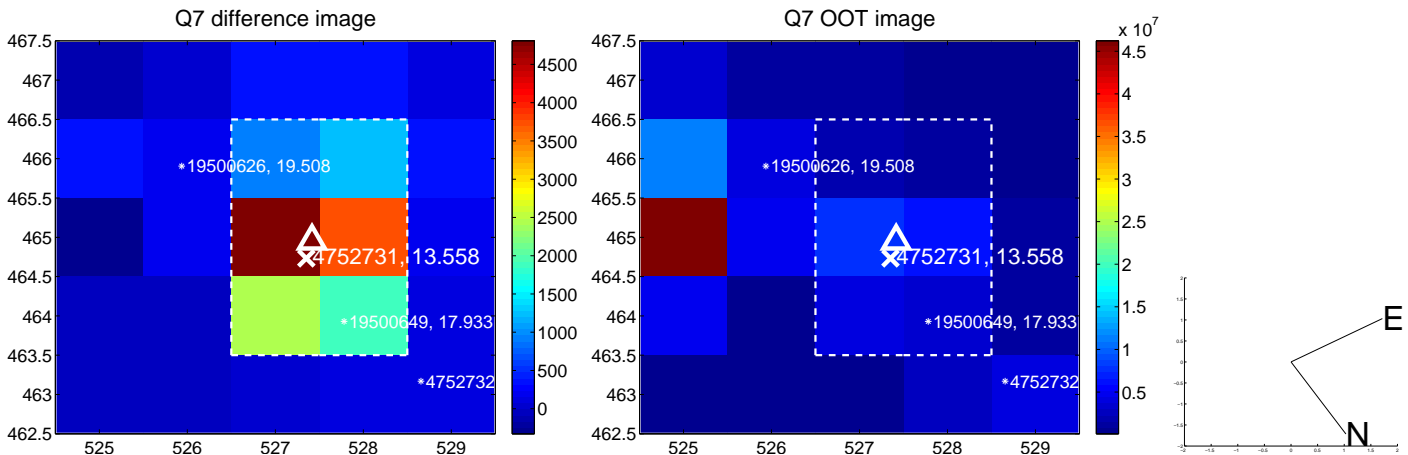
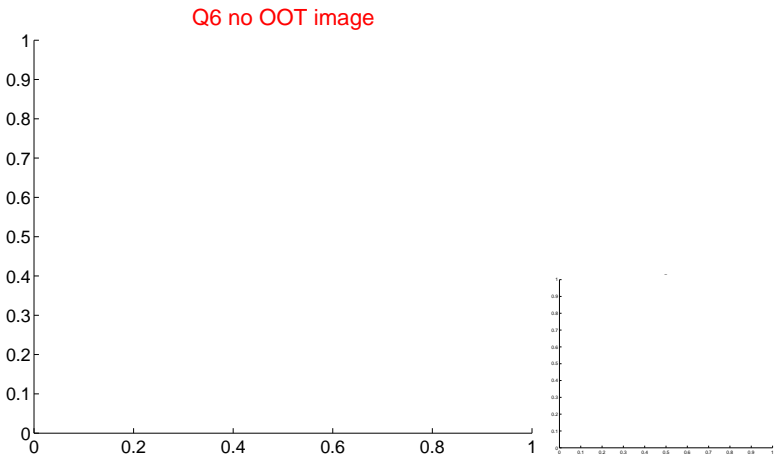
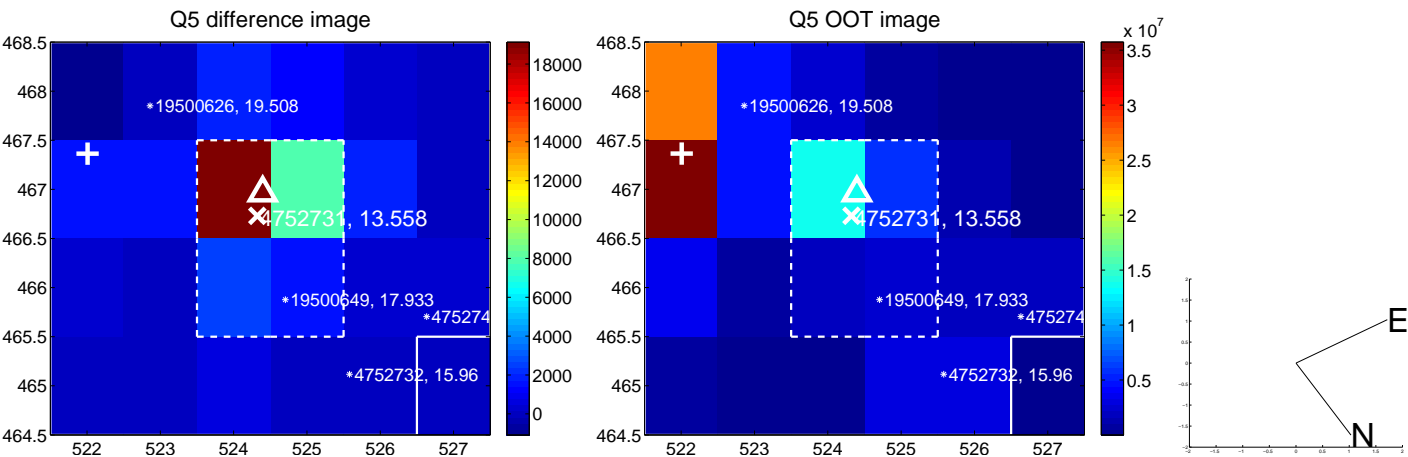


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

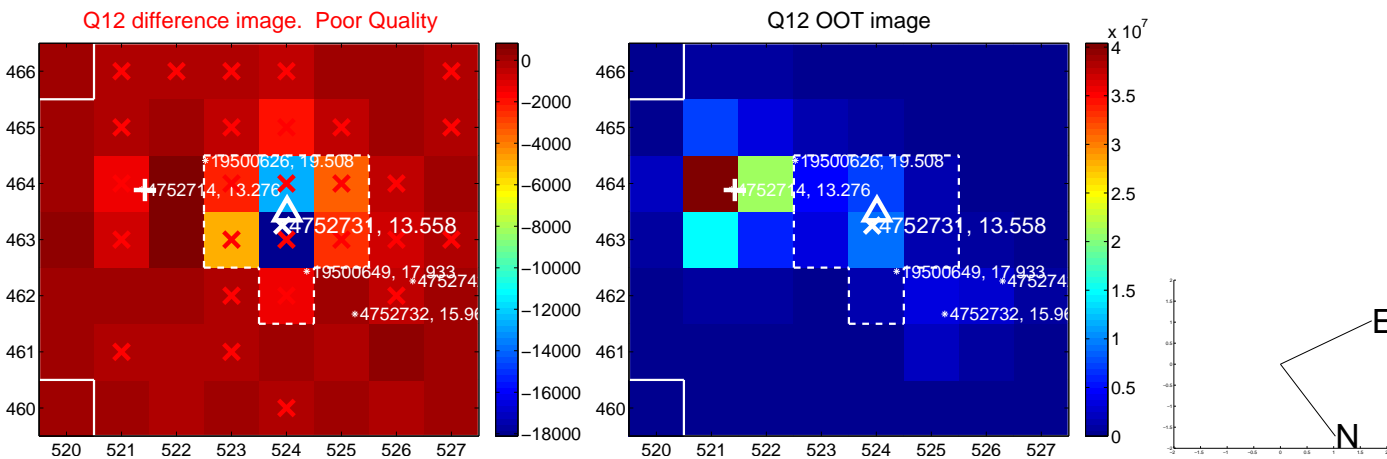
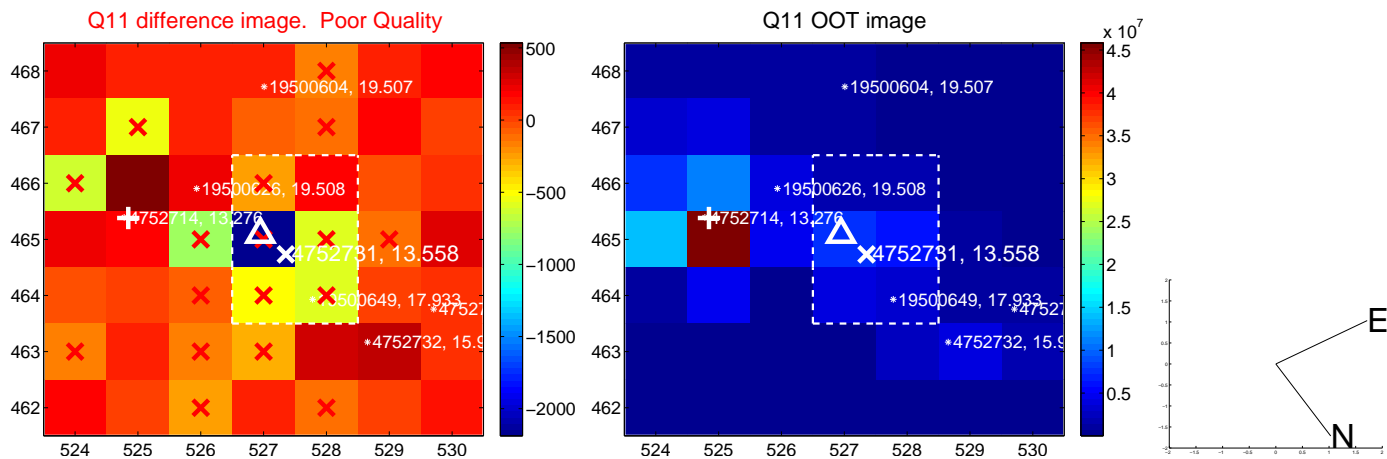
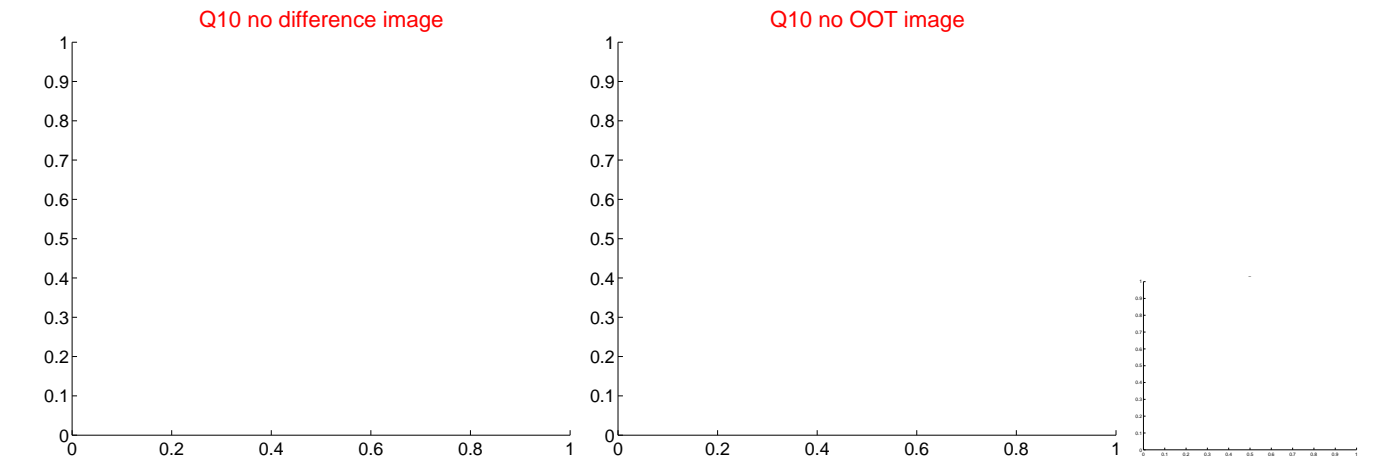
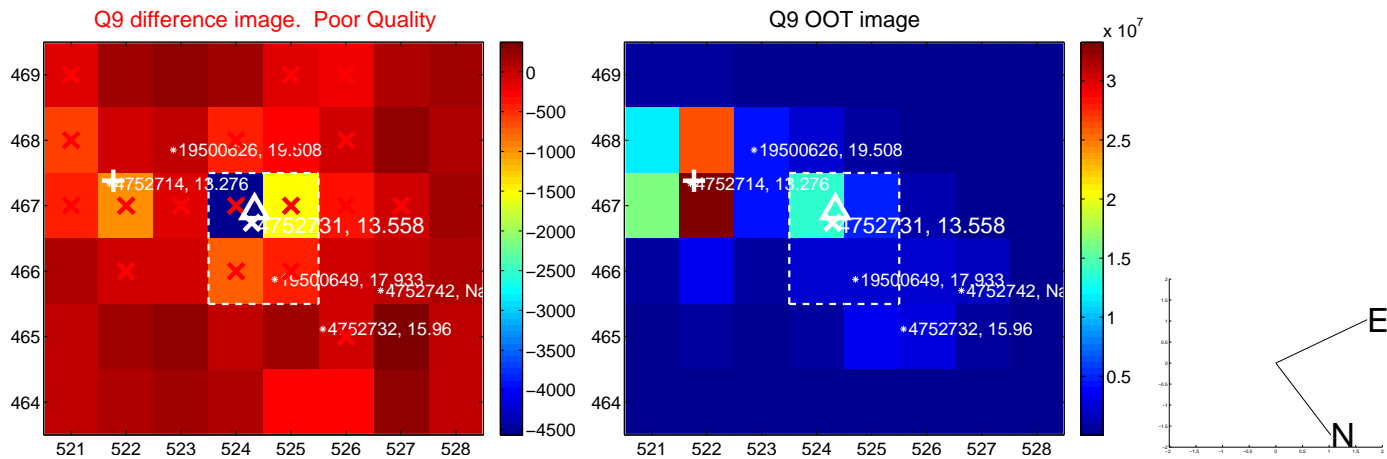
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



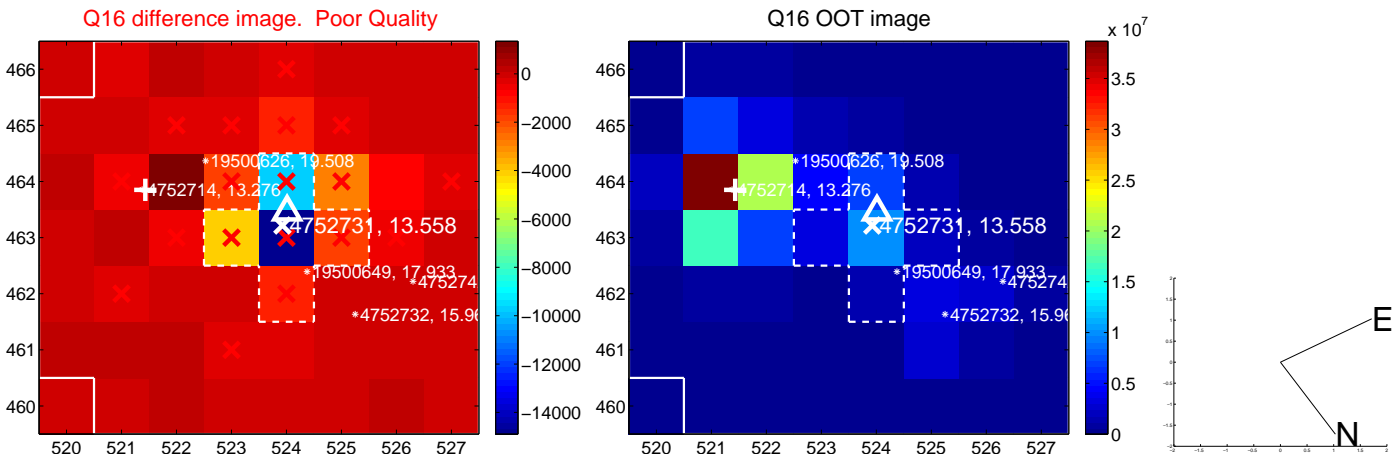
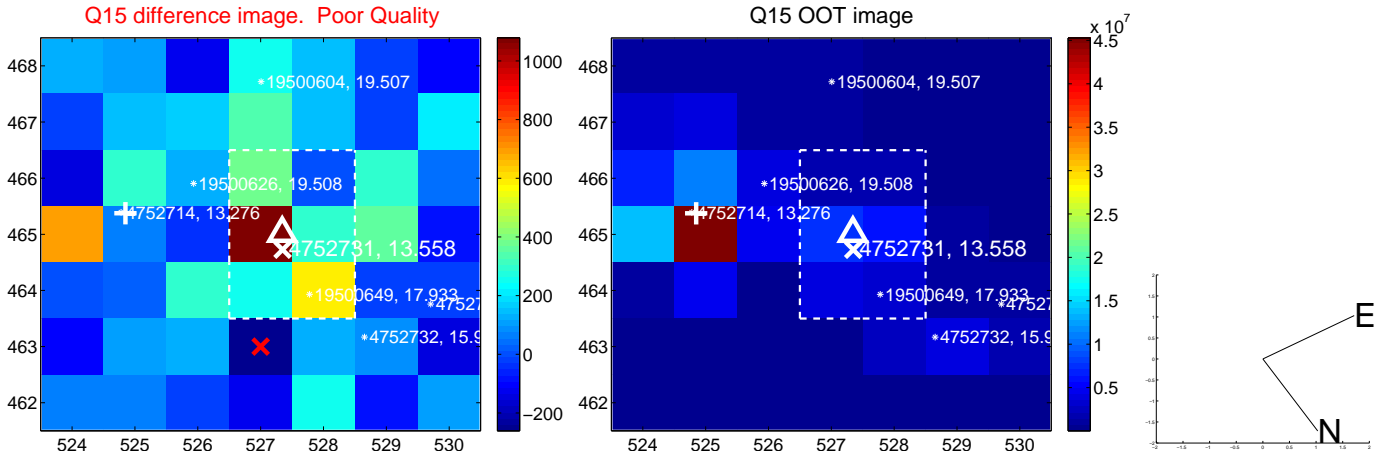
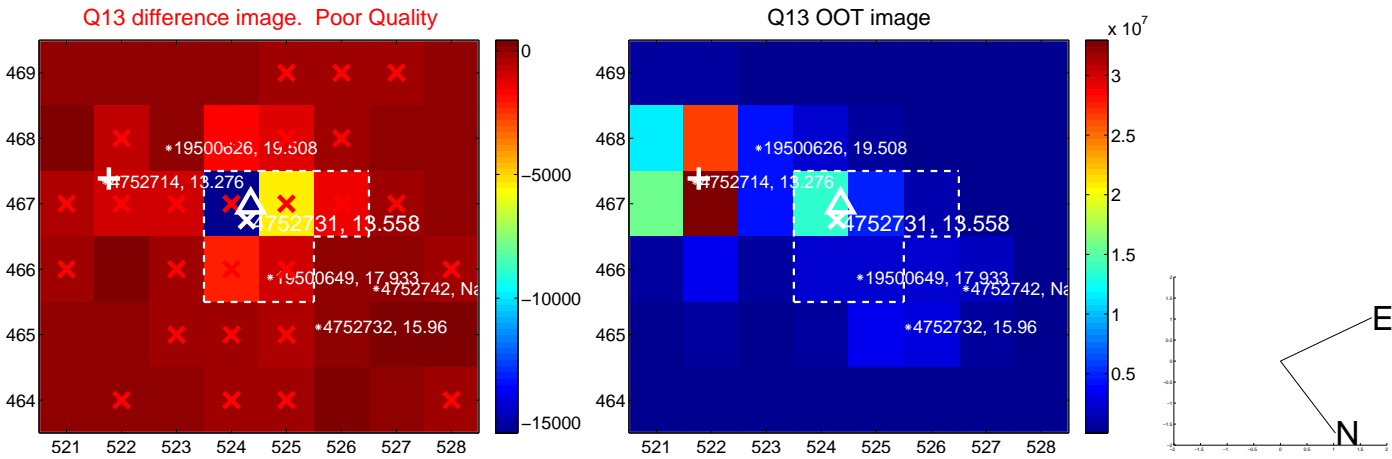
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



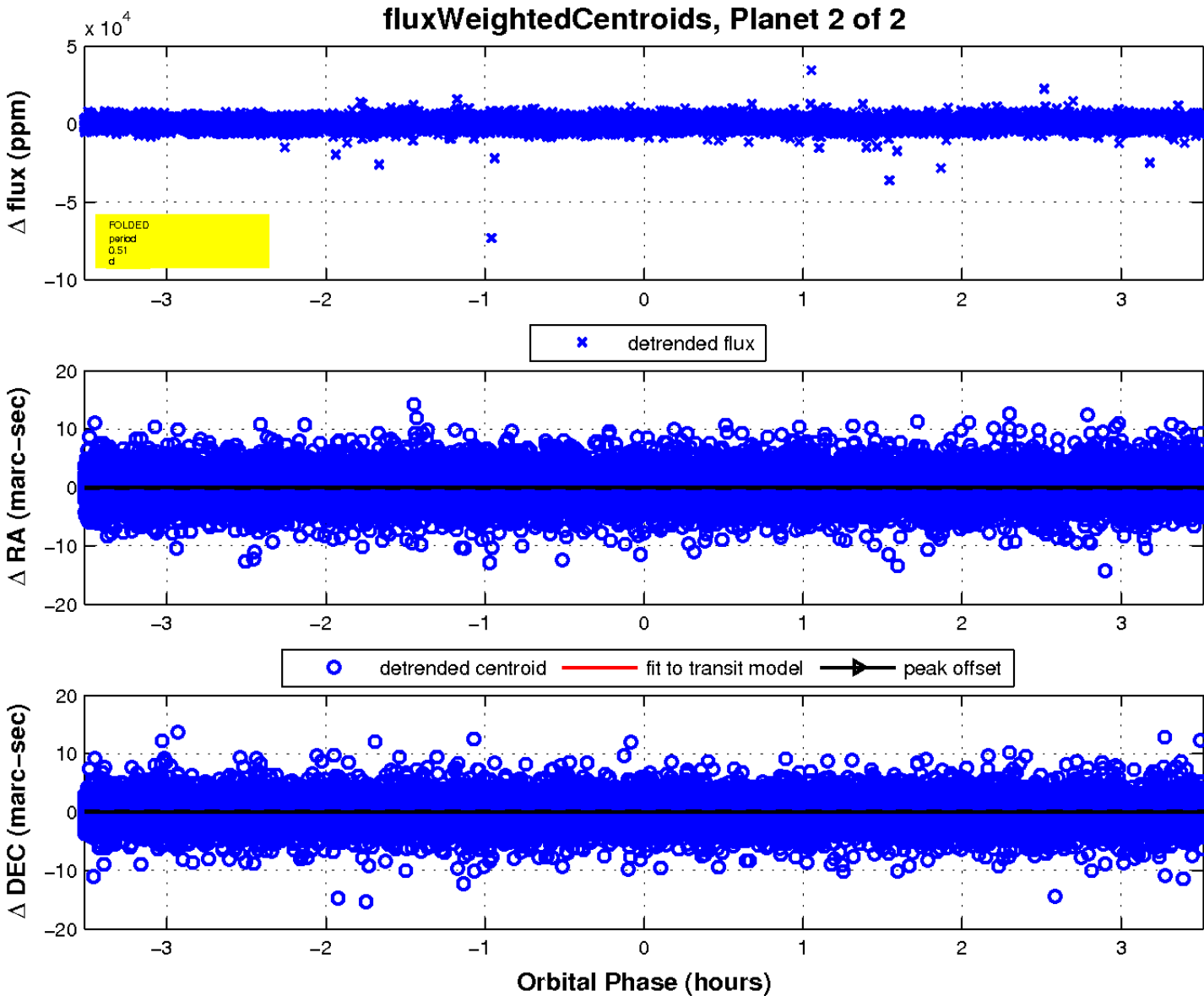
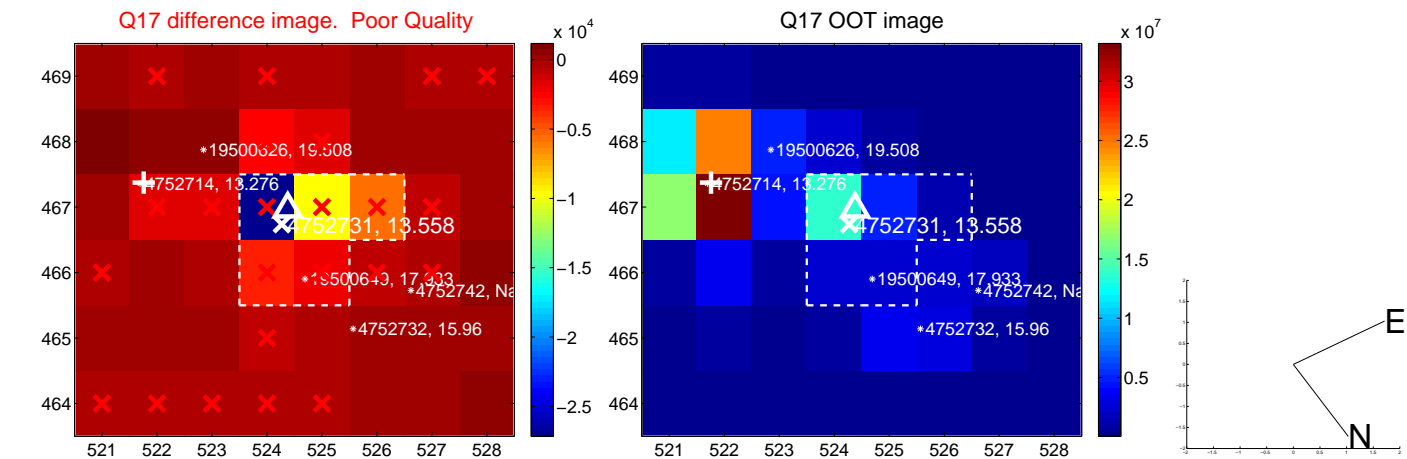
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

